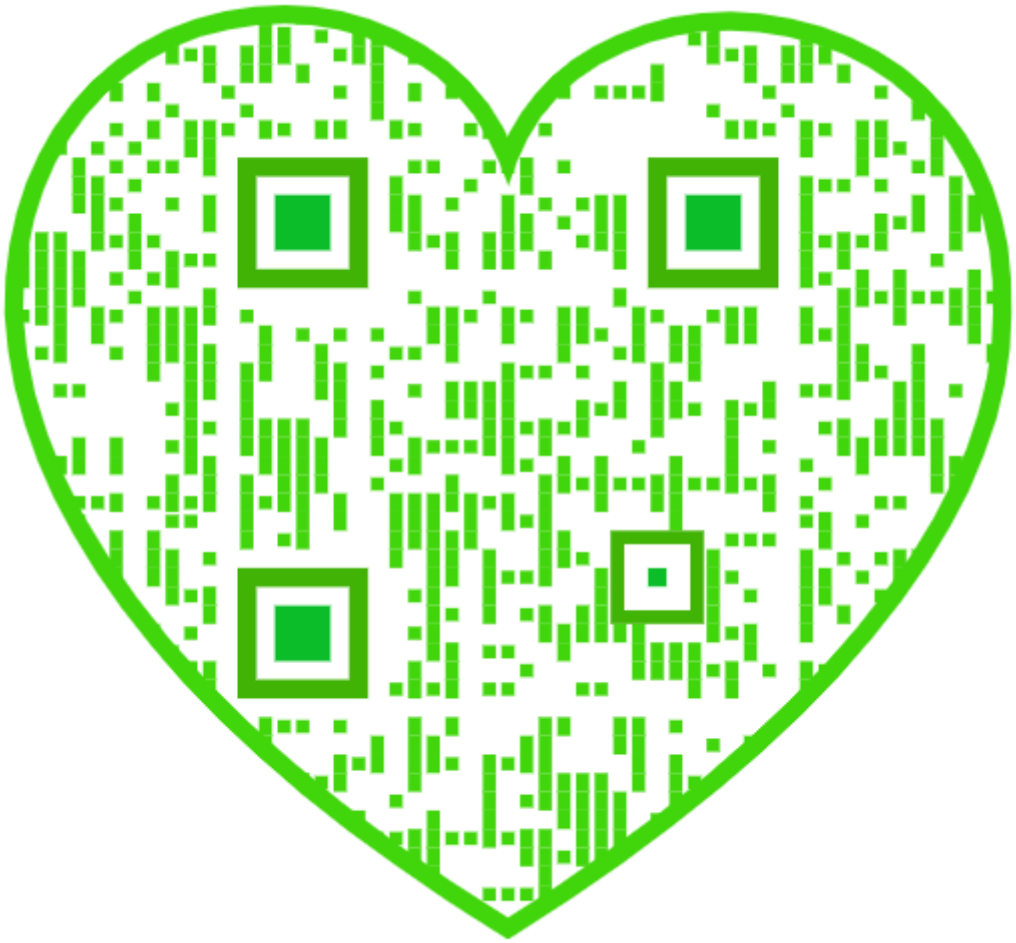

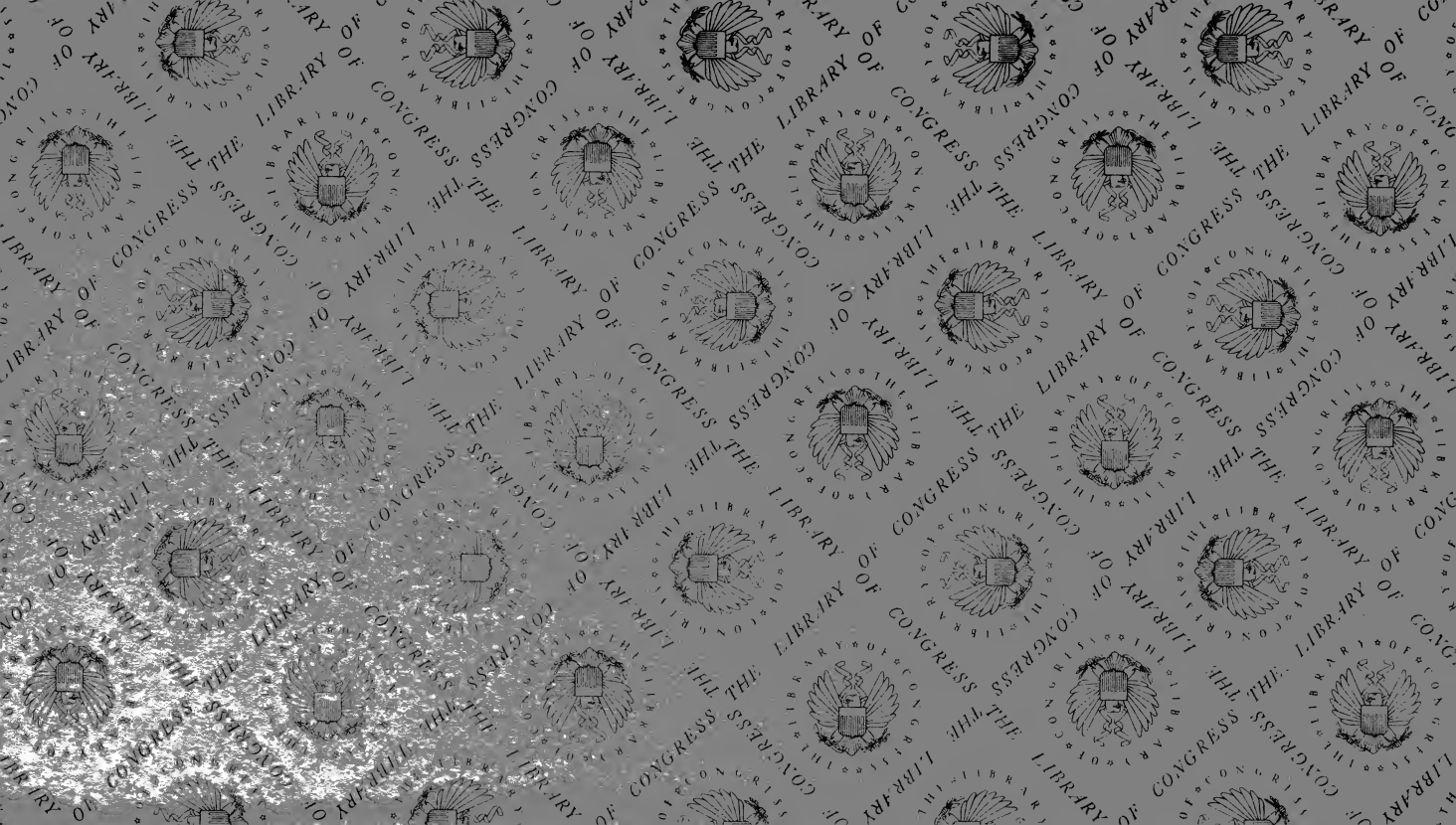
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CULTIVATED PLANTS

AND

DOMESTIC ANIMALS

IN THEIR MIGRATION FROM ASIA TO EUROPE

BY

VICTOR HEHN

EDITED BY

JAMES STEVEN STALLYBRASS

EDITOR OF GRIMM'S "TEUTONIC MYTHOLOGY," ETC., ETC.

CHEAP

EDITION

LONDON

SWAN SONNENSCHEIN & CO.

PATERNOSTER SQUARE

1891

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To the

RIGHT HONOURABLE

WILLIAM EWART GLADSTONE

THIS BOOK IS

(BY PERMISSION)

Respectfully Dedicated.

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1898
CITY OF WASHINGTON.

PREFACE.

THE history of our Domestic Animals and Cultivated Plants is a subject of absorbing interest to the educated man, and (if he knew it) to the uneducated man too. It forms no small part of the history of Man himself and his slow advance to civilization.

We cannot afford to kick down the ladders we have climbed by. If our venerable friend the "lowing Steer" has now "doffed the weary yoke" for good and all, and even his quite recent successor Dobbin bids fair to be driven off the field by a mechanical substitute, "the divel's oän teäm;" yet, some three or four thousand years ago, with our first wooden plough just invented, and the steam-plough still a long way ahead, what could we have done without "the ox and the ass to ear the ground"?

And we have not quite done with our old friends yet; not till we have learnt to relish milk and beef manufactured without the aid of milkmaid or butcher; not till the invalid, advised to "take horse-exercise," consents to take it alongside Master Tom in the day-nursery. And not then. The Iron Horse was to have exterminated his prototype of flesh and blood, but Dobbin seems inclined to stay; nay, if we except the plough-horse and the stager, he is in greater request than ever.

And who can state the sum of our obligations to the sheep, the pig, the camel, the dog, and even poor mousing Puss? Or why should Chanticleer and his family, with other bipeds of the poultry-yard, be forgotten? And much the same may be said of Cultivated Plants—the grains, the potherbs, garden-flowers, fruit-trees, timber, and even ornamental trees.

Now the history of the Plants and Animals of Europe—of their reclamation from a wild state to the service of man, and their distribution in their present *locale*—is susceptible of two or three different methods of investigation, which sometimes clash, and lead to opposite conclusions. It is certain that *some* of them are not natives of the countries where we find them; that they have been imported from abroad. But which of them? whence, and along what route? how early, and by whom? Our answers to these questions will be different, accordingly as we lean chiefly on Natural Science, or on Ancient History, Literature, and even Language.

The purely scientific man will judge chiefly by the suitability of soil and climate. If he finds a plant flourishing pretty abundantly in Greece or Italy now, and knows of no climatic or geologic changes that would exclude its having flourished there 5,000 years ago, he will at once pronounce it indigenous, and scout the notion of its having been imported.

But now listen to the scholar, and he may tell you that Homer never mentions such a plant; that later poets speak of it in a vague way as something very choice and very holy, and always in connection with some particular deity: they may have tasted its fruit, may have seen the figure of its flowers (probably conventional) in emblematic painting or carving, but have not the faintest notion of its shape or size, whether it be a grass, a shrub, or a tree; till at last, in the time of Darius or Alexander, the plant itself emerges into clear visibility. Your inference will be, that it came to Greece within historical times.

Or suppose the plant *was* common in Greece in Homer's time, so common that all memory of its introduction had died away, except in half-mythical traditions, say of the migration of a tribe, the founding of a city, and so forth;—is such Tradition to be despised? Why should not the plant have been imported a thousand years before Homer? Who knows how long Phœnician commerce, colonization, and conquest had been active, how long "great Zidon" and "the strong city Tyre" had stood?

Lastly, where History, Literature, and even Tradition fail us, may not the modern science of Language come to our aid? Suppose the name of the plant stands isolated in Greek, but has its root and a family of relations in Hebrew or Persic; that it can be

traced along the coast of Asia Minor and across a string of Ægean Islands to the south of Greece, or round by the Euxine and Thrace to Northern Greece, following the very track of Phœnician commerce or Iranian conquest and migration;—can we doubt whence the name and the thing must have come?

Professor Hehn thinks that of late years the Scientist has had too much his own way, that it is time for the Historic and Philologic methods to come into play, and have their say. Hence his book, which he modestly calls a historico-linguistic sketch. "Sketch" is a light word for the load of learning he pours out before us. Comparative Philology is not the thing of lucky guesses that the Etymology of our fathers used to be; it has well-ascertained laws, which raise it to the dignity of a science.

He holds that Europe owes much more to Asia than the mere botanist and mere zoologist are willing to admit. In particular, that the Flora of Southern Europe has been revolutionized under the hand of Man; that the evergeen vegetation of Italy and Greece is not indigenous, but is mainly due to the sacred groves planted round the temples of Oriental gods and goddesses; that in this way the laurel has followed the worship of Apollo, the cypress and myrtle that of "Ashtoreth of the Zidonians" (Aphrodite), the olive that of Athena, and so on. At the same time, the reverence for the Olive, the Vine, the Fig, &c., was not all superstitious fancy, but founded on their value to man as the source (and therefore symbol) of a higher type of life.

He has much to say on the Indo-Europeans or Aryans at the time of their settling in this continent. He is inclined to place their status as to culture not so high as most recent writers have done. He even thinks they stood at a lower stage of civilization than the builders of the Lake-villages in Switzerland; that instead of these being a "mysterious pre-Aryan race," they were Aryans at a comparatively advanced stage, for they cultivated barley, wheat, and flax, &c. In fact, the low condition of the Aryans on entering Europe, and their subsequent obligations, both to other Aryans (Iranians) in Asia, and above all to the Semitic race in Palestine, form perhaps the central idea of the whole book.

The Translator has judged it best, for the convenience of the

common reader, to banish from the body of the book many Greek and Latin citations—on which the Author rather prides himself—and disquisitions on the exact value of ancient words. In revising her Translation for the press, I have taken the liberty to restore some of this omitted matter, where it seemed essential to the argument. If too much has been omitted, the Translator apologizes to the learned Author on the ground that she wished his book to be *read*. Readers with an appetite for philology will probably still find an abundant feast in the "Notes," which are translated in full.

J. S. S.

CONTENTS.

	PAGE
INTRODUCTION	17
THE HORSE (*Equus caballus*)	35
THE VINE (*Vitis vinifera*)	69
THE FIG-TREE (*Ficus Carica*)	85
THE OLIVE-TREE (*Olea Europæa, L.*)	88
DOMICILIATION. TREE-CULTURE	102
ASSES, MULES, GOATS	110
STONE ARCHITECTURE	114
BEER	119
BUTTER	127
FLAX (*Linum usitatissimum*) / HEMP (*Cannabis sativa*)	132
LEEK. ONION	153
CUMMIN. MUSTARD	162
LENTILS AND PEAS	165
LAUREL (*Laurus Nobilis*) / MYRTLE (*Myrtus communis*)	169
THE BOX-TREE	176
THE POMEGRANATE-TREE (*Punica granatum*)	180
THE QUINCE (*Pyrus Cydonia*) / (*Cydonia vulgaris*)	185

PAGE

THE ROSE (*Rosa Gallica, centifolia*)
THE LILY (*Lilium candidum*) 187

THE SAFFRON (*Crocus sativus*) 197

THE DATE-PALM (*Phœnix dactylifera*) 202

THE CYPRESS (*Cupressus sempervirens*) 212

THE PLANE-TREE (*Platanus Orientalis*) 217

THE PINE-TREE (*Pinus pinea*) 223

THE CANE (*Arundo donax*) 228

THE PAPYRUS 232

CUCURBITACEOUS PLANTS 234

THE DOMESTIC FOWL 241

THE PIGEON 253

THE PEACOCK 263

THE GUINEA-FOWL 271

THE PHEASANT 274

GOOSE. DUCK 277

HAWKING 282

THE PLUM-TREE (*Prunus domestica*, *Prunus insititia*) 287

THE MULBERRY-TREE (*Morus nigra*) 290

ALMONDS. WALNUTS. CHESTNUTS 294

THE CHERRY-TREE (*Prunus cerasus*) 300

ARBUTUS (*Strawberry-tree*)
MEDICA (*Lucerne*) 304
CYTISUS (*Laburnum*) .

THE OLEANDER (*Nerium Oleander*) 309

THE PISTACHIO (*Pistacia vera*) 312

PEACH (*Amygdalus Persica*)
APRICOT (*Prunus Armeniaca*) 320

PAGE

FRUIT-CULTURE. IMPING, GRAFTING 323
THE AGRUMI, OR ORANGE GROUP 329
THE CAROB-TREE (*Ceratonia siliqua*) 340
THE RABBIT (*Lepus cuniculus*) 343
THE CAT 346
THE BUFFALO 354
THE HOP (*Humulus Lupulus*) 358
RETROSPECT 363
MODERN EUROPE 372
THE RICE-PLANT (*Oryza sativa*) 379
MAIZE (*Zea Mais*) 384
BLACK MILLET (*Sorgum vulgare*) 385
BUCKWHEAT (*Polygonum fagopyrum*) 386
THE TULIP 391
AMERICA 394
CONCLUSION 398
NOTES 407

THE HISTORY AND MIGRATIONS

OF

CULTIVATED PLANTS AND DOMESTIC ANIMALS.

INTRODUCTION.

That the animal and vegetable worlds—that is to say, the whole physiognomy of life, labour, and landscape in a country—may, in the course of centuries, be changed under the hand of Man is an experimental fact that, especially since the discovery of America, cannot be contradicted. During the last three centuries—in a purely historical period, since the invention of printing, and in full view of the civilized world—the native animals and plants in newly discovered islands and in the colonized countries of the Western Hemisphere have been supplanted by those of Europe, or by a flora and fauna collected from all parts of the globe. In St. Helena, for instance, the aboriginal wild vegetation has retreated to the mountains in the interior of the island, driven in by an advancing circle of novel plants which came over the ocean in the train of Europeans. In the pampas of Buenos Ayres, for miles together, we meet with scarcely one indigenous plant; they have all succumbed to the usurpation of plants introduced from Europe.

But a far wider view of the subject, extending over two or three thousand years, is afforded by the history of organic nature in Greece and Italy. These two countries in their present state are the result of a long and varied process of culture, and infinitely removed from the point at which they were first placed by

nature. Almost everything that strikes the northern traveller on crossing the Alps as novel and agreeable—the quiet, plastic beauty of the vegetation, the characteristic forms of the landscape and animals, nay, even the geological structure (in so far as it has become exposed by changes in its organic covering, and has then felt the effects of light and atmospheric agencies)—is a product of civilization brought about by manifold transformations during long periods of time. Any bird's-eye view of a tract of land in Italy is at the same time a survey of earlier and of later centuries in its history. Nature gave the polar altitude, the formation of the ground, and the geographical position; all the rest is the work of improving culture. The contour of the peninsula, half continent and half island; the temperate climate; then the multiplicity of historic relations—in the earliest times the repeated inroads from the north, the marine traffic with Tyre, the Greek colonies, the near neighbourhood of opposite Africa, and the wide-spread Roman empire, which introduced all the gifts and arts of the East; later on, the Teutonic immigrations from the north-east, the Byzantine and the Arab dominion, the Crusades, the connexion of Italian seaports with the Levant; and lastly, after the discovery of America, the close political union with Spain—all these and other circumstances and fates have produced the land "where amid foliage dark the golden orange glows, where motionless the myrtle stands, and high the laurel towers."

The thorny, blue-green American agave and the thick-leaved cactus, which now cover all the shores of the Mediterranean, and so marvellously suit the southern rocks and gardens, were only brought there from America in the sixteenth century! That cypress near the vine-dresser's cottage, towering in solitary gloom above the wilderness of fruit all round it, has its home on the mountains of Afghanistan. Yonder curiously twisted grey-green olive-trees originally came from Palestine and Syria; the fatherland of those date-palms in the convent garden of St. Bonaventura at Rome is the Delta of the Euphrates and Tigris. Though these and other cultivated plants seem to us true children of the Hesperian soil and climate, they were once strangers, slowly introduced in the course of ages, and at long intervals. Often

their history lies more or less clearly before us, but oftener still it must be gathered from scattered and doubtful testimony, or guessed by analogy.

EXHAUSTION BY CULTURE.

But what if the transformation we now behold be mere corruption, over-cultivation, and decay of vital power? An opinion so hostile to culture has not wanted advocates among learned men. They say that, as the whole human race has degenerated from a former nobler state, and all we know now is how to destroy the works of God; as every land and nation has its appointed time, and the same process is being repeated on each in turn, so that history is one monotonous round, which will finally be put an end to by the Last Judgment; so likewise the classical lands are physically dead, their natural condition has been disturbed, and their soil exhausted by over-culture. As regards Greece, such opinions do at first sight seem partly true. One German author, C. Fraas, declares modern Greece—which in its best days was thickly wooded, rainy, and watered by copious rivers—to be a barren waste, waterless through the uprooting of its woods, stripped of its upper soil, and left a prey to its burning climate; a land incapable of profitable tillage, or any industry that demands timber, and therefore no fit abode for an economically developed community. Assertions like these are extended to the whole of Western Asia; thus Babylonia is said to have been used up by ancient culture and irretrievably ruined. But disappointed hopes and indignation at ungrateful treatment have evidently biassed our author: he does not always quote the ancient authors impartially; he passes over what did not serve his purpose, and puts a false interpretation on many facts. For example, the great cold complained of in the introduction to the "Vendîdâd" is no proof that the climate of Iran has become hot since those early days; for the passage quoted is either a mere reminiscence of the original home of the Zends, the highlands on the western border of Central Asia, or it refers to one of the cold mountain regions not wanting within the limits of Iranian territory. The fact that

cypress wood was used in building Alexander the Great's fleet on the Euphrates is not much to the point; for, from the earliest times of Phœnician commerce, cypress wood was considered eminently fit for ship-building; and then who can tell us whether Babylonia was ever rich in heavy-timbered trees? That Greece is less wooded now than it was in Homer's time, and earlier, is undeniable; but it is equally true that many mountain districts of the Peloponnesus have denser forests of oak and pine than when the country was thickly peopled and studded with towns; and that Attica, in the time of Pericles and Alcibiades, was dry as it is now. Plato calls the Ilissus a "streamlet," and we are told that the once bare and treeless Attica was first planted with olive-trees by Pisistratus. The destruction of forests is a phase, but not the final upshot, of culture. When a community takes the first steps towards civilization on a virgin soil, the primeval forest must give way before the most pressing wants: there is no thought of choice or forbearance. Each individual draws what he wants from the unlimited treasure, which, like the free air, is open to all. At this stage the uprooter of the forest seems a benefactor and hero. And in those ancient times it was really more difficult to penetrate into the woods than we now imagine; it was a work that demanded almost superhuman effort. Theophrastus tells of an attempt made by the Romans to found a colony in Corsica, which was frustrated by the impenetrability of the woods; the new-comers were, so to speak, beaten back by the thicket. A passage in a work of Strabo is also instructive in this connexion: "Eratosthenes says (of Cyprus, but the precedent is typical) that, anciently, dense woods covered all the plains and hindered cultivation; mining thinned them a little, then came navigation, which also consumed much timber; but, all this not vanquishing the wilderness, every one was allowed to make a clearing and settle where he liked, and the piece of land thus reclaimed was promised to him as his untaxed property." And this last measure, we may add in the same spirit, was the first thing that created light and culture. The farther the forest receded, the more friendly did nature become, and the more varied her gifts of herb and fruit; for the unbroken primeval forest had suffered only

a limited and uniform vegetation to exist beneath its gloomy and everlasting shade. Not until long after is this condition reversed, in obedience to the law of the three stages. The scarcity of wood, shade, and moisture awakens a regret for the departed freshness of nature; conscience, so to speak, is aroused; then the existence of the forest within certain limits is intentionally secured; or, where it is absolutely wanting, plantations are commenced, as is now the case in many European states. But before thoughtful husbandry can make good what preceding generations have remorselessly spoiled, there often sets in, from other historic causes, a period of ferality, when the land presents the appearance, here of being exhausted by culture, there of having fallen a prey to blind man-hating nature (*e.g.*, by the accumulation of swamps), and that is the point at which Greece now stands. But at no time was that country damp and foggy, like England; it was always close to Africa, and the ancients themselves kept goats, sank cisterns, and practised artificial irrigation. E. Curtius must have been led away by Fraas, when in the preface to his "Journey in the Peloponnesus," he takes such a gloomy and hopeless view of the physical condition of Greece. What matters it that philosophers like Plato sometimes describe the earth, and especially Hellas, as aged, a bare skeleton that once was clothed? Plato's whole character is that of an elegiac idealist; and Seneca, when he uses the expression, "senility of the soil," shows himself in this, as in other points, a precursor of Christianity. Is not there the same general impression amongst us? do not we constantly hear it said that the climate has changed, that in the speaker's younger days people were stronger and healthier, the soil more fertile, and so on? The old sailor with whom Julius Fröbel made the passage from New York to Chagres would have it that during his lifetime the trade-winds had fallen off in their punctuality. Times without number the approaching end of all things has been argued from the increasing wickedness of the world. Lasaulx, another Munich romanticist, not long ago prophesied the downfall of West-European civilization (which to him was the same thing as the fall of the Church), and actually installed the Slavs as heirs. Against these maggots of the brain

we have means of refutation that were not accessible to our ancestors, namely, the figures of statistics and the calculations of physical science. E. Curtius concludes with the words: "Part of these evils (caused by the destruction of woods) can be rectified by restoring the disturbed order of nature; other damages no second culture can ever repair, any more than, in organic life, art can revive a power that has died oat." Pray, what may these irreparable damages be? Moist earth can be laid in terraces on the hill-sides, stagnant rivers purified, dry heaths watered, plains that have gone to marsh can be drained, and forests, if protected from goats and the fires of shepherds, would soon, in that happy climate, cover once more the flanks of the mountains. What is there impossible to capital in all this? and what powers are lost beyond recall? The general conditions of nature, which man cannot master, existed in ancient times as much as now. The floods caused by a sudden thunderstorm, for instance, will always rush destructive to the vale, and with them carry trees and rocks, just as they did in Homer's time, and when they subside, leave a long pebbly waste behind; things of which there is no fear in the plains of Central Europe, where rain often drips from the sky for days together. That which seems to northern travellers who carry an ideal Greece in their imaginations to be *present* decay, is, in part, the character of southern lands and climates *in general.* The evils complained of are inseparably bound up with all the charm and bounty of countries lying nearer to the sun. Besides, we must not over-rate the influence of forests on climate. As often occurs with new points of view, this one has been too exclusively applied. In the present case were also enlisted the sympathy of poetical minds, and especially the interest of the feudal nobility, who fought on behalf of large estates, who did not relish losing their hunting-grounds, and were happy to be able, for once, to join chorus with the newest doctrines of national economy. In real fact, the climate and atmospheric conditions of European countries, as a whole, do not depend on the vegetable covering of the ground at all, but, next to their latitude, on far-reaching meteorological processes that extend from Africa and the Atlantic Ocean to Lake Aral and Siberia.

Franz Unger, taking a wider view than Fraas, answers the question whether the East, as to its physical natural, is capable of regeneration, in the affirmative. He opposes the notion that there is any such thing as a senile marasmus of nature, and that civilization digs its own grave. You need only alter the men who inhabit the ground; the ground itself has lost nothing of its creative force, and only requires forbearance and assistance. For instance, if the herds of goats could be diminished or fed at home, the underwood would grow up into strong forest, and the driest mountains clothe themselves at least with bushes, without any artificial planting or terracing. Ere long the stone-pine and Oriental oak would cease to be the only trees that greet the traveller's eye in Greece. It is difficult to say how many generations must come and go before the East can be verdant again, but under those skies the generative and sanative powers of nature are marvellous. And, as with vegetation, so it is with other evils which the country has suffered since ancient times. Many harbours, for instance, used by the ancients are now blocked up with sand; there are even finer harbours that were too large and deep for the small craft of the olden time, but are exactly suited to modern means and dimensions. Thus the question whether Greece, Asia Minor, Syria, and Palestine, countries now so utterly neglected, shall ever rejoice in a new florescence, will depend entirely on the course of world-history and culture; physical nature will place no insurmountable hindrance in the way. And the notion that those wretched countries are used up rests not on agricultural or scientific observation, but on false theories of the philosophy of history.

From another and equally gloomy point of view the disciples of a new science—agricultural chemistry—have already passed sentence on the East and the Mediterranean countries, and raised their lament over the dead. Cultivation of the soil, they say, carried on for thousands of years, exhausts the ground and forces man to migrate to new countries. The materials necessary to the growth and ripening of plants, the alkalies, phosphoric salts, etc., are only present in a limited quantity on any given surface; and when, from long successive harvests, the stock is

exhausted and the limit reached, the ground can bear no more fruit; just as an exhausted mine yields no more metal. By the ground lying fallow, the minerals it contains have merely an opportunity of becoming soluble; time, so to speak, only opens up the ground, but its power goes no farther. When once those minerals have been taken from it, lying fallow does the ground no good. The most careful farming only serves to further and hasten the chemical processes which the ingredients of the soil must undergo for the plant to get at them; it cannot create new ingredients of the same kind. By manuring we give back to the ground a part of what we have taken out of it, but only a part, and in the course of centuries the deficit mounts up, till the field that once was richest will no longer reward human labour. Every harvest that is exported, every grain-ship that carries the produce of an agricultural district over the sea, is a direct diminution of the capital lying in the ground. What the towns consume is drawn from the country, and only comes back to it in small quantities or not at all. The refuse of men and animals, the leaves of trees, the dust of decaying organic life is blown away by storms, carried off by streams, and finally deposited in the ocean, the last grand receptacle. What London needs, the counties have had to yield, and by way of the Thames it is sunk in the depths of the German Ocean. As with London, so it was once with Babylon, with Rome, with the innumerable urban settlements of the ancient world; the surrounding countries now lie prostrate, and there is no hope that they will ever revive, because by early-commenced and long-continued culture all the materials capable of transformation into vegetable life have been sucked up and carried away. If this train of thought be correct, the fate that has already overtaken the ancient countries lies in store for the whole earth. England will no longer bear a grain of wheat, just as her store of iron and coal will some time or other be exhausted. Mexico will still be fruitful then, but for that land too the day of eternal rest will arrive; and so on through all the lands of both hemispheres. And the fate that is only hastened by the necessities of mankind must, even if man had never existed, follow as a last consequence in the natural course of vegetable life. Then—let

us add—all the mountains of the earth will be levelled by the power of water, wind, and atmospheric action; and the sun, which constantly parts with heat, without, as far as we know, receiving any equivalent, will grow cold and dead, and with it the earth and its inhabitants. Fortunately we cannot even approximately calculate the date when all this is to happen, so we have a little leisure left us to find out if some link in our chain of reasoning may not prove untenable, and the whole prediction turn out a hoax, and a hypochondriacal chimera. For already, in more than one part of the globe, there have been discovered inexhaustible deposits of phosphorite, capable of fructifying the soil of whole countries for an indefinite period. Might not, in the nearer or farther future, the power of space-conquering machinery be so increased that new soil from such local accumulations could be carried to far-distant regions, and with it new energy of vegetable life? What may some day be accomplished in this direction is already possessed in part by the countries round the Mediterranean, in their mountainous and varied conformation, and the *irrigation* connected with it from the most ancient times. For while the rainfall in the corn-growing plains of the European forest and steppe region simply waters the fields without replacing the loss they have suffered, the torrents rushing from the mountains of the Mediterranean countries continually enrich the de-alkalized upper crust with the treasures of the earth's interior. A living example of this is Lombardy; the rocky platform against which that province leans pours into it, by means of the rivers and the solid or dissolved earths they carry with them, ever new mineral nourishment, and keeps it as fruitful as it was two thousand years ago. And what nature alone could not accomplish was of set purpose completed by man, taught by necessity. In the East and around the Mediterranean, wherever the summers are rainless, vegetation was threatened with destruction by drought during the three or four hot months of every year. In these countries therefore, from the earliest times, the art of irrigation, the banking and diverting of streams, their horizontal distribution, the digging of canals, the making of dams and bores, of water-wheels and wells, were practised. So necessary was all this labour under

the sunny skies, that it was continued from generation to generation until it became a second nature and innate skill. And as the art of irrigation was originally a sign of awakening reason, it also became a powerful stimulant to further mental development. It bound man to man, not by the stupid natural gregariousness common to beasts, but by free reciprocity, the first germ of all communities and states. North of the Alps this necessity ceased; there the German settled where he liked, cared nothing for his neighbours, and developed his characteristic feature of personal independence. Even in the New World, where the two races met under similar natural conditions, this state of things continued. In New Mexico, for instance, the Spaniards had made miles and miles of canal for irrigation, which were afterwards neglected by the Anglo-Saxon immigrants, to the great detriment of the country. "This kind of cultivation," says Fröbel, "is foreign to the inhabitants of the United States, and contrary to their individualizing disposition; for no large system of irrigation is conceivable without some legislation that would limit the individual's free disposal of his property." Even an American author remarks, that in American hands any agriculture depending on irrigation must always fail, "because the despotic rule of a community necessary under such a system agrees but little with American notions." To the Saxon race, therefore, all organized association seems despotic, whereas on the Mediterranean, from Bactria and Babylonia to the Pillars of Hercules, it was a behest of nature, and became a characteristic feature of the nations. But, apart from its politico-moral effects, irrigation does secure to the soil perennial youth, as long as mountains stand and waters run. Where field and meadow have nothing to look to but the rising and falling vapours from the ocean, that state of exhaustion, which anxious and perhaps supercilious judges attribute to the classical countries, must ensue much more rapidly.

It was no inexorable law of nature that caused the decline of culture in the East, but the succession of historical events; the geographical position, which first favoured and then endangered human development; the collision of races, modes of life, and religions, and the accompanying contamination of blood and rage

for destruction. The home of the agricultural and town-building nations of Western Asia abutted on endless steppes and deserts, whence hordes of wild, blood-thirsty Nomads ever and again broke forth. Once, in very early times, nomadic *Semites* from the Caucasus must have penetrated to the Persian and Arabian Gulfs, and destroyed a civilization then extant, whose nature and duration we have now no means of ascertaining. Just as these invaders had begun to settle down on the new soil, there appeared the *Iranian* flood, which, perhaps contemporaneously with the first arrival of Indo-Europeans in Europe, split the Semitic world in two, and pushed on in separate waves, as Phrygians, Lycians, etc., till it reached the Mediterranean. From that time the two races strove against each other; the Semites crowding together in huge despotic centres, round palaces adorned with statues, digging canals and handling the spade; the Iranians pasturing their cattle in natural freedom, divided into tribes and led by patriarchs, lying in wait to plunder, destroying or carrying off whatever they could lay their hands on.

Gradually, by the influence of time and example, and by ruling over more civilized countries, part of the Iranians adopted a settled mode of life and a higher order of government; while the other half of this immense race—the Sacæ and Massagetæ, the Sarmatians and Scythians, and later the Alani and Jazyges —continued the old nomadic life on their immeasurable plains. This division into two halves is the antagonism between "Iran and Turan," between civilization and barbaric freedom; the region of Iranian culture with difficulty defended itself against ever-recurring invasions of wild tribes from the heart of the steppes. Thus, before the end of the seventh century B.C., plundering Scythians overran the best part of Asia; which raid, however, only lasting twenty-eight years, was soon forgotten as a mere episode. Cyrus indeed attempted to subjugate the Massagetæ, and Darius the Scythians, but both without success. On the contrary, during the rule of the Seleucidæ, mounted archers of Iranian race from the region of the Jaxartes—the Parthians—established themselves in Media and Persia as far as the Euphrates. Then, in the seventh century of our era, the *Arabs*, fanatic sons of the desert,

came like a whirlwind, and tore up by the roots everything connected with religion—and what was or is there in the East *not* connected with religion? Once more the Semitic spirit had mastered the Iranian, in return for what it had suffered at the hands of Medes and Persians. Yet, great as was the desolation wrought on the gardens and cities of Bactria and Media, on the Tigris and Euphrates lands, on Syria and Asia Minor, by the Turanians and Islamites—these nomad horsemen were, after all, of much the same blood, of noble origin and handsome figure, capable of culture, and unconsciously bearing within them the possibilities and needs of civilized life. Complete ruin, beyond hope of recovery, came only when the bestial races, which had hitherto lain concealed in the Altai mountains, around the Baikal Lake, and on the dismal highlands in the heart of the continent, forming a fit nomadic background to the Chinese empire—I mean the Turks and after them the Mongols—found their way southwestward into the Aryan-Semitic world.

The first of the *Turkish* races that appeared in Europe was the horde of Huns; and what impression their brutish exterior alone made on the western world may be seen by the descriptions of contemporary historians, and by the popular legend of the supposed "Tartarean" origin of these Tatârs. Ammianus Marcellinus, describing the rude customs of the Alani, formerly called Massagetæ, adds: "They are for the most part tall, handsome men, somewhat like the Huns in their mode of life, but standing at a higher stage of humanity." In the sixth century A.D., Sogdiana and Bactria, on the Old-Iranian canal-traversed banks of the Jaxartes and Oxus, were already Turkish; thence, in the following centuries, all Asia was gradually overrun, desolated, burnt, and plundered, and the inhabitants murdered or led into captivity. Seljukian chiefs wielded the leathern whip, solemnly set their feet on the necks of vanquished Emirs, and then ordered the unhappy wretches to be hewn in pieces; Persian girls, with almond-shaped eyes and long eyelashes, were dragged into the dirty felt tents of their howling, mis-shapen masters; and, from Lake Aral to the Mediterranean, ignoble Upper-Asian blood was mixed with that of the old civilized nations—a lasting element of

moral degradation and mental impotence. Yet even the Turkish conquest seems but a small evil compared with the horrible cruelties that marked the path of the *Mongols*. Words are futile to describe what was practised in the East by this race of yellow, squinting jackals from the wastes of Gobi. We will quote only one example. When Tchingis Khan, in the year 1221, attacked the great flourishing city of Balkh, the Bactra of ancient renown, which possessed 1,200 mosques and 200 public baths, he was met by envoys bearing presents and provisions, and praying for mercy. The Khan, apparently pacified, marched into the city; and then, on the pretence of wishing to count them, had the whole of the inhabitants led out into the fields in detachments, and there slaughtered: the city itself was razed to the ground, and to this day remains a vast field of ruins. The Turkish nations, which had come from farther west, were almost immediately won over to Islam, and thus became intimately bound up with the West; and in the course of years, it must be confessed, they did not remain altogether insensible to the milder customs and inherited civilization of the people they had conquered; but the Mongolian hordes were led solely by the instinct of destruction and murder, and the traces of their existence have not disappeared to the present day. Ever since their time the East has lain like a man mortally wounded, and has not the power to rise. So fatal to the oldest human culture and the happy lands in which it flourished, was their contiguity to the inhospitable highlands in the interior of the continent, the native home of a lower race with repulsive features and filthy manners.

So, too, the Greek peninsula owes its ruin to the neighbourhood of Asia and the steppes of Eastern Europe, and to adulteration with foreign blood. The Bulgarians, a Turkish race, settled south of the Danube; the wild Avars, also of Turkish origin, harried the provinces lying round the fortified capital; and, five hundred years ago, the Osmans already ruled and wasted this foreland of Europe. The Germans, too, had made Greek soil the scene of their still unsatiated appetite for war and booty; we need only recall the desolating raids which the Goths, on arriving at the Black Sea, undertook against the coasts, towns, and islands of

Asia Minor and the Peloponnesus. (Italy they mostly spared till after their first fury was spent.) The Slavs have permanently inundated not only the Danube regions and Thrace, but every part of ancient Greece itself, and given names out of their own language to its mountains, valleys, rivers, and towns. From the savage recesses of the mountains, Albanians poured down into the depopulated country; both races then adopted the degenerate Byzantine Greek imposed upon them by the church and the political rule of Constantinople; and with the remnant of the original inhabitants, so far as any such were left, they formed the present nation of the Greeks. Thus the barbarism out of which Greece is painfully struggling is explained by the abomination of desolation that has fallen upon her, and not by a pretended exhaustion of the powers of nature, which are, no doubt, as effective now as they were in the days of her fairest bloom.

THE OLDEN TIME.

When the great Aryan Migration brought the first inhabitants of a higher race, that we are historically acquainted with, into the two peninsulas which afterwards became the scene of classic culture, those lands (we may imagine) were covered with thick, impenetrable forests of dark firs and evergreen ilexes, or deciduous oaks, similar to what is described by Homer:

> "Nor here the sun's meridian rays had power,
> Nor wind sharp-piercing, nor the rushing shower;
> The verdant arch so close its texture kept;"

interspersed in the river valleys with more open stretches of meadow land, grazed by the herds of the new-comers, and with many a naked or grass-grown precipice, climbed by the nibbling sheep, from whose summits here and there could be seen the waste, unfruitful sea. The swine found plenteous nourishment in the abundant acorns, the dog guarded the flocks, wild honeycombs furnished wax and honey, wild apple, pear, and sloe trees afforded a hard, sour fruit; at the stag and boar, wild ox and ravening wolf the arrow sped from the bow, or the sharp, stone-tipped spear was hurled. Game and domestic animals furnished all that was needed: skins for clothing, horns for drinking vessels, sinews

and entrails for bow-strings, bones for tools and their handles. Raw hides were the principal material, and needles of bone or horn served to stitch them together. The osier boat was covered with hide, and the leathern coat was sewed together with the sinews of bulls:

"Sew thee skins with thread of bull."—HESIOD.

Spear and arrow-heads were fastened to the shaft with thongs, the draught cattle harnessed to the wain with leather straps, and the stick that urged the cattle was armed with a leathern lash. The beaver, which was eaten, was a much persecuted animal, and thickly peopled the lakes and rivers of all Europe. From this animal (Latin, *fiber;* Celtic, *beber*, *biber*) were named the Gallic cities Bibrax and Bibracte. The name soon disappeared from the Greek dialects, as the animal did from Greece; on the other hand, it passed from Europe into the East. The wood of the yew tree (note 1) served for bows, that of the ash, elder, and privet for the shafts of spears; wicker shields were woven of the willow. The gigantic trees of the primeval forest were hollowed by fire, and hewn with the stone axe into immense boats. On the wheeled waggon (note 2)—a machine of early invention, and built entirely of wood, with wooden pegs instead of iron nails—were carried the goods and chattels of the wanderer—his milking-pail, skins, and so on. The wool of the sheep was plucked out (note 3), and stamped out into felt covers and cloths, used particularly to protect the head:

"Over thy head
Press the formed felt, thy ears to protect from the wet."—HESIOD.

From the bark of trees, especially of the lime tree, and from the fibres of the stalks of many plants, principally of the nettle kind, the women plaited (plaiting is a very ancient art, the forerunner of weaving, which it nearly resembles) mats and web-like stuffs, hunting and fishing nets. Milk and flesh were the staple food, and salt a favourite condiment, but difficult to procure, and sought for on the sea-shore and in the ashes of plants (note 4). The farther south the easier it became to winter the cattle, which up in the north found but scanty nourishment beneath the snow,

and in severe seasons must have perished wholesale; for the sheltering of cattle and the storing of dried grass against the winter are inventions of later origin, that followed in the wake of a somewhat advanced husbandry. The domestic animals were of poor breed. The pig, for example, was the small so-called peat-pig (torf-swine), far inferior to the animal now improved by cultivation and commerce. In winter the human dwelling-place was a hole in the ground, artificially dug, and roofed over with turf or dung (note 5); in summer it was the waggon itself, or, in the woods, a light tent-like hut, made of branches and wicker work. Warfare amongst a cattle-killing race would of course be sanguinary, and punishments cruel. Rage, revenge, and thirst for booty were the prevailing motives. Cunning, ambush, and surprise, like that practised in the chase, were the forms and methods of war. Prisoners were slaughtered, as was the custom with the Cimbrians, and even the Germans of Tacitus; slaves were mutilated for greater safety, the victor drank the blood of his vanquished enemy, whose skull was at once his drinking-bowl at the banquet and a glorious trophy (note 6). Old men, whose fighting days were done, voluntarily suffered death or were murdered; likewise those who were incurably sick (note 7). Human blood flowed copiously at religious feasts and sacrifices; the chief was followed into his grave by his servants, wives, horses, and dogs (note 8); wives were stolen or purchased, and the new-born child was accepted, or rejected and exposed, by the father.

The powers of nature, whose presence was felt with dull terror, had not yet been embodied in any personal form; the word for God, of which the Latin form is *Deus*, still signified the sky (as *devas* and its synonyms among the Finns, etc., preserve that meaning to this day); and while moral ideas were already developed in the Indian *Varunas*, the process of personification had scarcely commenced in the Greek *Uranos*. Important or exceptional matters were decided by casting lots (note 9). Superstition and prognostics governed all action or inaction; a conjuring spell could unloose the bonds of a captive or give supernatural powers to a weapon; wounds made by the axe were cured, and spouting blood was stanched, by incantations.

"With bandage firm Ulysses' knee they bound;
Then chanting mystic lays, the closing wound,
Of sacred melody confess'd the force."—ODYSSEY.

As in the religious idea the transformation of the powers of nature into demonic personages was not yet complete, or had only just commenced, so forms derived directly from nature still governed Society: from the family tie and the patriarch's rule was developed first a narrow and then a more comprehensive coherence of the tribe (it is only by slow degrees that words like the Gr. *polis*, Lat. *populus*, Goth. *thiuda*, etc., rise at last into the domain of freedom, that is, into political ideas: note 10). Within historic times tattooing was a sign of noble lineage, and perhaps the relic of a very ancient custom, for it is found among widely scattered members of the great race, among the Geloni and Agathyrsi, the Thracians, Sarmatians, and Dacians, and among the Britons in their distant isle, who apparently owe their very name to the custom (Old Irish *brit*, Cambr. *breith* = variegatus), and *Pict* perhaps is only the Latin translation of *Briton*, the tattooed.

In marshalling soldiers for war the numbers of the decimal system were already in use—a first approach to abstraction; but the idea of *thousand* had not yet been conceived, for the word is wanting (note 11). For the rest, the language was a relatively intact, many-membered organism, internally governed by vital laws; such as, after thousands of years, is still the wonder and delight of the grammarian, but could only have grown up in the obscurity of a clouded intellect and a direct consciousness of objects, for with awaking reflection the rank overgrowth of grammatical forms and the paradisaical fulness of sound begin to die away.

Such, so far as we can reconstruct it in our minds from a few of its general features, was the condition of these immigrant nations at the time of their dispersion over Europe. A comparison is perhaps afforded by indications in the Old Testament of the first conquest of Palestine by Semitic pastoral tribes; here the Canaanites were met by savage aborigines, who were afterwards imagined as giants, and of whom some remnants still existed, when, quite at the last, the Israelites took forcible possession of the land of their forerunners and kinsmen. So the

Aryan tribes in Europe may have found aboriginal inhabitants there before them, whom they either exterminated, or with whom they amalgamated: in the east the Finns, a very degraded race of hunters, who were unacquainted with wool, salt, and the wheeled waggon, and could not even count up to a hundred; in the west and south the Iberians and perhaps Libyans, of whose state of culture we are ignorant. Another and still more instructive parallel occurring in quite historic times is offered by the Turks in their march of conquest through Asia, and the settlement of that nomadic race in the wide tract of land it had overrun. Certainly the Turks—and this may somewhat limit the analogy—did not drive herds of cattle before them, but came riding on swift steeds, which carried both them and their tents; and here the difficult question arises, Did the Aryans bring the tamed horse with them, or did they make acquaintance with it later? We mentioned above, among funereal sacrifices, the *horses* of the deceased; may not we have committed an anachronism? Humboldt says: "The Inner (Kirghis) Horde inhabits a part of the regions over which formerly roamed the Kalmuk-Turguts, who originally came from the Chinese frontier, and who, on the night of the 5th January, 1771, about seventy years ago (now above one hundred), set out with their 30,000 *yurtas* to fight their way to the plains of Dzungaria, a march of 2,000 miles. This migration of 150,000 Kalmuks, accompanied by their wives, children, and cattle, is a historic fact that *throws great light on the ancient incursions of Asiatic nations into Europe.*" This remark of the far-sighted traveller (for which we would willingly sacrifice a dozen so-called Aryan idylls, however charmingly coloured) must not be forgotten; but the waggons and herds of those Kalmuks were protected by troops of warlike horsemen, so that the march could be safely and uninterruptedly accomplished; have we any right to imagine the earliest incursions from Asia to have been similarly constituted? In what follows next, we will gather together the chief particulars of the most ancient historical accounts of the *Horse*, and thereby, perhaps, gain some probability for or against the above view.

THE HORSE

(EQUUS CABALLUS.)

THE noble horse, the darling and companion of the hero, the delight of poets (witness the splendid descriptions in the Book of Job and in Homer's Iliad)—that glossy, proud, aristocratic, quivering, nervous animal, with its rhythmic action—has his home nevertheless in one of the wildest and most inhospitable regions of the world—the steppes and pasture-lands of Central Asia, the realm of storms. There, we are assured, the wild horse still roams under the name of *Tarpan*, which tarpan cannot always be distinguished from the only half-wild *Musin*, or fugitive from tame or half-tame herds.

It grazes in troops, under a wary leader, always moving against the wind, nostrils and ears alert to every danger, and not seldom struck by a wild panic which drives it full speed across the immeasurable plain. During the terrible winter of the steppes, it scrapes the snow away with its hoofs, and scantily feeds on the dead grasses and leaves which it finds beneath. It has a thick, flowing mane and bushy tail, and when the winter cold commences, the hair all over its body grows into a kind of thin fur. And in this very region lived the first equestrian races of whom we have any knowledge—in the east the Mongols, in the west the Turks; taking those names in their widest sense. Even now the existence of these races is bound up with that of the horse. The Mongol thinks it shameful to go on foot; he is always on horseback, and when he occasionally dismounts, he moves and stands as if completely out of his element. Before a Mongolian boy can walk, he is lifted on to a horse and clings to its mane;

thus he grows up on the animal's back, and at last becomes one with it. This mode of living, continued for thousands of years from generation to generation, has given a distinguishing stamp to the physical form of the Mongolian. His legs are bowed, his walk is clumsy, and the upper part of his body leans forward. When in his tent, his restless, wandering eyes have the expression of those of a rider in the immeasurable steppes, always watching the horizon to detect the smallest cloud of dust. His riches consist in the number and size of his half-wild *Tabûn*; when he wants a young animal, he catches it with the lasso. The milk of the brood-mares is his drink and means of intoxication (great practice and strength are required to milk the mares after they are hobbled); horseflesh is his customary and favourite food. It is true that Buddhism has attempted to abolish the last-named article of food among the modern Mongols, and the pious *Lama* at least abstains from its enjoyment. The skin and hair of the horse are also useful to the Mongol; out of the first he cuts his indispensable thongs, the latter serves for ropes and sieves, and he clothes himself with the skin of young colts.

From the wide plains of that part of the world the horse migrated into the highlands of Northern India, the well-watered valleys of Turkestan, and the districts and deserts of the Jaxartes and Oxus. In those parts the Turkoman's horse is even now distinguished for its intelligence, strength, and endurance. With very scanty provision the Turkoman rides a hundred kilomètres (sixty-three miles) without stopping; attacks, plunders, and disappears, before his victims recover from their surprise. He often spends the night asleep on the back of his animal in the middle of the desert, which does not afford him one drop of water for his favourite. He loves his horse, Vámbéry tells us, better than wife or child, better than himself; it is touching to see the care taken of his animal by this rude, rapacious son of the desert; how he clothes and protects it from cold and heat, and spends all he can afford on its saddle and bridle. In the eyes of the Kirghis too the horse is the very ideal of beauty. "He loves his horse," says W. Radloff, "better than his sweetheart, and a fine animal can tempt the most respectable and honest man to

steal." But it must be remarked that the Turkoman breed, though pure in the main, has been largely crossed with Arab blood, and to this mixture owes part of its noble qualities.

That the horse in its original wildness also roamed westward of Turkestan, over the steppes of the present South-eastern and Southern Russia, and to the foot of the Carpathians, seems likely enough; not so likely that even the forest region of Central Europe once abounded in troops of that animal. And yet much historical testimony seems to put the fact beyond a doubt. Varro speaks of *Spanish* wild horses; and Strabo writes, "In Iberia there are many deer and wild horses." Wild horses as well as wild bulls lived among the Alps, as we learn again from Strabo; and Pliny tells us, not only in the Alps but in the north generally. Nor are the Middle Ages wanting in proofs of the existence of wild horses in Germany and the countries east of Germany. At the time of Venantius Fortunatus the *onager*—under which name may be understood the wild horse—was hunted in the Ardennes, as well as bears, stags, and wild boars. In Italy wild horses were seen for the first time during the rule of the Longobards, under King Agilulf (Paul. Diac. 4, 11). In 732 Pope Gregory III. writes to St. Boniface: "Thou hast permitted to some the flesh of the wild horse, and to most that of the tame. Henceforward, holy brother, thou shalt in no wise allow it." So, up to that time, the apostle of the Germans had been very liberal, perhaps because in his native island he had been accustomed from his youth to the habit which appeared so horrible to the Italian at Rome. Among the benedictions of Monk Ekkehard of St. Gallen (about 1000 A.D.) to be pronounced over the meats served in the refectory of that monastery, one refers to the flesh of wild horses, which must therefore have been eaten by the pious brethren. An old German proverb says: "A foal taken from a *herd of wild horses* will sooner be tamed than a depraved man learn to be ashamed." In the "Sachsen-spiegel," where it treats of women's outfit and dowry, it is decreed that wild horses which have not always been guarded shall not be reckoned as part of such property. In a Westphalian document of 1316, the fishing, game, and *wild horses* of a certain forest are apportioned to one

Hermann. Not alone in the time of the Merovingians, but at the end of the sixteenth century, wild horses would seem to have lived in the Vosges mountains, the wild borderland between two nationalities; for Rösslin, in his account of Alsace and the Vosges (Strasburg, 1593), thus circumstantially describes them: "Horses that be of their kind much wilder and shyer than the stag; also much more difficult to take even in traps like the stag; yet when they are tamed, which is accomplished with great toil and trouble, they make the very best horses, that equal those of Spain and Turkey, and surpass them in many things, and are hardier, for they are accustomed to cold and to coarse food, and are sure-footed, being as used to mountains and rocks as the chamois." If wild horses were thus found in the cultivated west and south of Germany, they must have existed still longer in the wild country on the Baltic, in Poland and Russia. In fact, we find innumerable proofs of this down to modern times. At the time of Bishop Otto of Bamberg, in the first half of the twelfth century, Pomerania was rich in all kinds of game, including wild oxen and horses. At the same period wild horses are mentioned as extant in Silesia, whence Duke Sobeslaus in 1132 "carried away many captives, and herds of wild mares not a few." It is known, and is confirmed by many literary allusions, that till the time of the Reformation, and even later, the woods of Prussia were inhabited by wild horses. Töppen's History of Masovia (Geschichte Masurens, Danzig, 1870) says: "In the time of the Teutonic Knights, wild horses and other game were hunted chiefly for their skins. In 1543 Duke Albert sent an order to the commander at Lyck, bidding him take measures for the preservation of the wild horses." Proofs of the horse being an object of the chase in Poland and Lithuania are found far into the seventeenth century. As to Russia, it is sufficient to quote the remarkable words of Vladimir Monomach, prince of Tchernigov, who lived from 1053 to 1125. He says of himself, in his posthumous exhortation to his sons (preserved in the "Lawrentian Chronicle"): "But at Tchernigov I did this: I caught alive and bound with my own hands from ten to twenty wild horses; and as I rode along the river Ross (which formed a sort of boundary

between the Russians and the wild Turkish Polovtsy), I caught similar horses with my own hands."

To form a correct judgment of such passages, it is necessary to weigh the following facts. In the oldest historic times the horse, among Europeans, was kept as it is now by the Asiatic nomads. It grazed at a distance from the settlements in large, half-wild herds (*stud*, A.S. *stôd*, Slav. *stado*, O.H.G. *stuot*); and when a full-grown animal was needed, it was caught and broken in by severe methods, under which many a poor beast must have been throttled to death. The Old Norse saying, "Feed the horse at home, the dog abroad," was a later rule, giving much the same advice as the Greek proverb which has become naturalized among us: "The master's eye makes a fat horse." In earlier times the freedom in which young horses were bred must have frequently led to complete ferality both in individuals and in whole herds; the former—for example, mares at breeding time—running away and getting lost; and the latter, when hunted by wolves or persecuted by gad-flies, rushing panic-stricken into the wilderness, to become objects of the chase like stags and elks. The fact that in pre-civilized times Central Europe, as far as Spain, was covered with dense forests, makes the hypothesis that that region was one of the natural homes of the horse improbable, for this animal is a native of the steppes, needing wide grass-lands and space in which its speed could be of avail in escaping from the larger beasts of prey. The very way in which some of those facts are recorded seems to point rather to horses *gone* wild than to those originally wild. When the Vosges horses, though with difficulty, do get broken in; when Duke Sobeslaus drives home herds of wild mares from Silesia; when the fishing, the game, *and* the *vagi equi* of a Westphalian district are assigned to Hermann, and the untended horses of an estate are not to be included in a bride's outfit—in all these cases we may suppose that only fugitive horses are meant. So the animals found in Pomerania by St. Otto, and in Prussia by the Teutonic Knights, may have been born in a wild state, and yet the progeny of merely fugitive mares; and this becomes the more probable the longer those regions had been the scene of war and rapine. It is still more likely that this was

the case in Tchernigov. In that borderland, close to the nomadic hordes, the woods may well have been the refuge of fugitive animals. It must be added that the epithet "white," given by Herodotus to the wild horses that grazed about the lake out of which the Hypanis flowed, shows that they were sacred herds kept in a partly free state.

Turning from the European chase to the steppes of Asia, the true home of the wild horse, we meet with the important fact, that the farther a country lies from this point of departure, the later is the appearance of the horse and its historical mention in that country, and the more clearly are the modes of breeding the animal seen to be derived from neighbouring nations to the east and north-east of it.

In Egypt, to begin with the remotest member, no figure of a horse or of a war-chariot has ever been found under the so-called "old kingdom." It is only when the period of the Shepherd Kings is over, and the eighteenth dynasty with its campaigns has commenced (about 1800 B.C.), that we find both pictorial representations and the first mention in the papyri (so far as they have been deciphered) of the horse and of war-chariots equipped in Asiatic fashion. The conjecture that the pastoral tribe of the Hyksos had introduced the novel animal, and with it the new art of war, into Egypt, is very tempting, but remains unsupported by any historical proof. It may have been the kings of the above-mentioned eighteenth dynasty that first made acquaintance with the horse and chariot during their peaceful or warlike relations with Syria. The Egyptian name for chariot is almost identical with the Hebrew, and the Egyptian word for horse, *sus*, is a Semitic one. In Egypt, as in Asia, the horse was kept exclusively for war; not one picture shows that it was ever employed in domestic or agricultural work, for what little seems to point to such a thing we may leave unnoticed as being too doubtful. Achilles is thinking of war-chariots when he says of Egyptian Thebes:

> "The world's great empress on the Egyptian plain
> That spreads her conquests o'er a thousand states,
> And pours her heroes through a hundred gates,
> Two hundred horsemen, and two hundred cars
> From each wide portal issuing to the wars."—ILIAD.

What the Egyptian himself thought of the use of the horse we learn from the following mythic story: "Osiris asked Horus what animal was most useful in war. When Horus answered, 'The horse,' Osiris was astonished, and inquired further, 'Why not rather the lion?' Then Horus said, 'The lion may be useful to him who requires assistance, but the horse serves to scatter and destroy the flying enemy.'" If we may trust Egyptian pictures, the lion was so far tamed by the Egyptians as to accompany Pharaoh to battle; it was chained to the chariot and let loose at the proper moment.

As to the time when the horse became known to the Semites of Western Asia, we are limited to the evidence of the Old Testament—the Pentateuch, the Book of Joshua, etc.; but when were these books written? There is not a piece in this collection that does not consist of different parts, or that has not passed through the hands of successive revisers. If some single written notes of the time of the Israelite Conquest were really preserved, they may have been interwoven into the narrative. As to the rest, the oldest biblical author, the so-called Elohist, whose book is certainly not older than the time of the Kings, can have had no other source than tradition, which, in accordance with its nature, had been forming and reforming its material during long periods of time. So we cannot be quite sure whether any given passage of the biblical reports was inspired by genuine tradition, by later theocratic or national views, or by the spirit of descriptive poetry. Descriptions of the horse are not wanting in the so-called books of Moses, nor in the historical books. In Joshua, for example, chap. xi. 4, we read, "And they (the Canaanites) went out, they and all their hosts with them, much people, even as the sand that is upon the sea-shore in multitude, with horses and chariots very many;" and the contents of such passages are confirmed by the song of Deborah, which must be far older than the foundation of the monarchy, and probably belongs to the thirteenth century before Christ. In Judges v. 22, we read, "Then were the horse-hoofs broken by means of the prancings, the prancings of their mighty ones;" and in ver. 28, "Why is his chariot so long in coming? why tarry the wheels of his chariot?" But in these

descriptions the horse is never mentioned as a domesticated animal; it has no share in the wanderings and battles of the Children of Israel; it is the warlike servant of their neighbours and enemies, prancing and stamping before the war-chariot or beneath the rider. As a war-horse, and as such only, it is also celebrated in the fine description in the Book of Job. In the household its place is taken by the ass. "Thou shalt not covet," says the Decalogue, the commands of which were derived from a relatively very ancient period, "thy neighbour's wife, . . . nor his ox, nor his ass, nor anything that is his." The horse, the chief object of rapine among mounted nomads, is here, very significantly, never mentioned. When we are told later that King Josiah abolished, among other heathen abominations, the horses and chariots that were sacred to the sun—this was a feature of the Iranian worship of the sun introduced from Media.

No wonder that we meet with no mention of the horse among the Ishmaelites or Arabs, that southern branch of the Semitic race. Nowhere in the Old Testament do we find horses accompanying the shepherds of the Arabian desert; those people travel only with camels and asses, and the mode of warfare in the despotic kingdoms from the Tigris to the Nile is unknown to them. Quite in agreement with the above is the fact that the Arabs in the army of Xerxes rode only on camels. Herodotus writes, "The Arabs were all mounted on camels, which yielded not to horses in swiftness." And Strabo informs us that in Arabia Felix there were neither horses nor mules: "There is a superfluity of domestic animals and herds, with the exception of horses, mules, and swine." It was the same in the country of the Nabathæi: "There are no horses in the country; their place is supplied by camels." And surely Strabo, the friend and companion of Ælius Gallus, who led the grand but unfortunate expedition into the heart of Arabia, was as well informed about the peninsula as any one living at that time. Again, at the battle of Magnesia, Antiochus the Great, like Xerxes, led Arabs mounted on dromedaries.

Those who find these ancient reports incredible, because Arab horses are now considered the noblest of the species, forget the fact that similar cases, so far from being rare, are very common indeed

in the history of culture. In the sand-seas of Arabia, where oases form the islands, the camel, that ship of the desert, was of greater use than a horse; it could move as swiftly as the latter, and go for a long time without water; it fed on the herbs of the desert, and carried on its broad back the women and children, the tents and provisions of the wandering nomads.

To the above direct evidence we may add the negative testimony of Publius Vegetius, a later compiler. He numbers and describes all the different equine races known to the ancients, but says nothing about Arab horses. Of African horses, which we might have supposed akin to the Arabian breed, he says they were used in the circus as being the fleetest, but he adds that they were of Spanish blood. An embassy was sent from Antioch to buy up race-horses, not in near Arabia but in distant Spain, and was provided by Symmachus with a letter of introduction to a Spanish horsebreeder. An older contemporary of Symmachus, however, Am. Marcellinus, in the latter half of the fourth century, mentions the fleet horses and slender camels of the Saracens, whose country he imagines as extending from the Tigris to the cataracts of the Nile. At about the same time the Emperor Valens possessed Saracen cavalry, which he sent against the Goths who were desolating the land. Here then is evidence that in the last days of antiquity and the dawn of the Middle Ages, the Arab horse, if not then introduced for the first time, must have grown, under careful handling and a favourable climate, into the noble and beautiful animal we now admire. The Arab horse is already spoken of with affectionate partiality, and used in similes both in the Koran and in fragments of pre-Islamite poetry, supposing these to be preserved in a genuine form.

Turning to the Eastern Semites, the Babylonians and Assyrians in the region of the Euphrates and Tigris, we find on the walls of excavated palaces numerous and vivid representations of the war-chariot drawn by richly caparisoned horses. (Layard's "Nineveh.") It was no doubt from this region that the new engine of war travelled westward and south-westward to the Syrians on the Mediterranean and the Egyptians in the valley of the Nile. It must have been in the plains of Mesopotamia that the application

of the chariot to swift attack and as swift retreat for the archer was invented. Wherever, in the sculptures of Nineveh, we meet with a rider armed with bow-and-arrow, his horse is invariably led by another horseman; if the former wields the spear instead of the bow, he has no assistant. The archer was obliged to have both hands free in order to clutch at the quiver, bend the bow, and send the arrow straight at the mark; for the Assyrian had not yet become so entirely one with his animal as the Parthian was later on, and the Turkoman is now. Therefore he had recourse to a second horseman, and afterwards to the light two-wheeled chariot, drawn by two horses and holding two men. In this chariot the warrior stood erect, looking freely around, with his driver by his side. In the very act of flight he could turn round and still let fly at the pursuing enemy. But even in the Assyrian wars, chariot-fighting seems to have been a prerogative of the rich, as was, in other times and among other nations, fighting on horseback. An Assyrian king is never represented on foot nor on horseback, but always in a chariot, except when besieging a fortress, where rapidity of movement was no desideratum. Only two horses were actually harnessed to the chariot, but a third, and sometimes a fourth, ran loose at the side, ready to replace the former if wounded or otherwise disabled. The horses in these pictures are, like the men, represented in a highly conventional form; yet Place, the author of "Nineveh and Assyria," asserts that among the modern Kurds, an Iranic race, he found very similarly shaped animals. And all the circumstances point to the Semitic horse having come from Iranian countries, just as the Egyptian horse came from Semitic countries. Thus the prophet Ezekiel informs us (xxvii. 14) that Tyre procured her horses from Togarmah, that is, from Armenia and Cappadocia: "They of the house of Togarmah traded in thy fairs with horses and horsemen and mules."

Lower down to the south-east, in India, we visibly get farther away from the centre of the circle described by the propagation of the horse. In India horses were neither frequent, nor beautiful, nor strong; they were introduced from countries on the north-west, and easily degenerated. The ancients not seldom mention this peculiarity of a country otherwise so rich in all natural

gifts; and the accounts of modern authors agree with theirs. But on the frontier, among the Vedic tribes in the Land of the Five Rivers (Panj-ab), the horse was highly valued. It was used in war and for sacrifice; was never ridden, but drew the war-chariot. However, just as other things prove that the life led by those tribes was not entirely original, but had been greatly influenced by western civilization, so we find that the Vedic war-chariot exactly resembles in all particulars that described by Homer, and both resemble the Assyrian chariot from which they were copied. In Carmania, west of the Indus, the ass was used instead of the horse, even in war; and in Persis, whence issued the founder of the Persian empire, the horse was almost entirely wanting, and the art of riding was unknown. Young Cyrus shouted with delight when he learnt to manage the noble beast at his grandfather's court, for in his mountain home it was unusual to keep or ride horses, and the animal was hardly ever seen. Afterwards, when he took up arms against the Medes and Hyrcanians, and had to face their swift cavalry, he recommended his followers thenceforth to "mount the steed and fly at the foe as if on wings." To the eloquent speech that Xenophon puts into his mouth on this occasion, one of his nobles, Chrysantas, responds approvingly; "and from that time," adds Xenophon, "no Persian gentleman ever likes to be seen on foot." Hence, as we are told in Strabo's works, there was inscribed on the tomb of Darius that the king had not only been a faithful friend, but the best rider, archer, and hunter. On this point, as well as in their form of government, their clothing, manners, and customs, the Persians copied their kinsmen the Medes, following the Babylonian model only so far as this was already established among the Medes. To consider the horse a sacred and prophetic animal, a sacrifice fit for the God of Light; to picture the chariot of the great king as drawn by pure white horses, and the Immortals as riding on white steeds; and to incorporate the word *açpa*, "a horse," in compound names of heroes and inferior gods—all this is Median and Bactrian, and was adopted by the Persian faith. Strabo says, "The whole of the present form of war called Persian, the preference for archery and riding, the splendour with which royalty is surrounded, and the rever-

ence paid to the king as to a god—all this was taught the Persians by the Medes." Media was the land of horses; whence they spread throughout Asia. The former country was well fitted for the purpose, partly by its natural construction, partly by the disposition of the inhabitants; it even formed the transition from Iran to Turan, that is, from the settled to the wandering tribes of Iranian blood.

"Media," says Polybius, "is distinguished for its superior races of men and horses; in the latter it excels all Asia, and for this reason the royal studs were established there." Strabo praises the Median and Armenian breed of horses: "Both lands are exceptionally rich in horses; there is a meadow-region, called Hippobotos, through which travellers who wish to go from Persis and Babylon to the Caspian Gates have to pass. In this region, in the time of the Persians, 50,000 mares are said to have been pastured, but the herds belonged to the king." It was in Media that the celebrated Nisæan horses, famed throughout antiquity, were bred. According to Herodotus: "In Media there is a wide plain called Nesaion; in this plain are bred the large horses named after it." Strabo says that these horses came from the meadow Hippobotos, which also he places in Armenia: "The Nisæan horses that, being the largest and best, are used by the Persian kings, come, some say from Media, others from Armenia. . . . Armenia is so blessed with horses that it is not inferior in that respect to Media, and the Nisæan horses used by the Persian kings are also found there; the Satrap of Armenia sent every year 20,000 young animals to the feast of Mithras." These horses were as swift as those of the modern Turkomans; and Aristotle says in praise of the Hyrcanian dromedaries, that, when they once began to go, they even outran the Nisæan horses, the swiftest of all. These horses were of peculiar form, resembling the so-called Parthian horse of the Asiatic Greeks in Strabo's time. Am. Marcellinus had himself seen troops of warriors thus mounted. Nisæa itself occurs frequently as the name of towns and districts on both sides of the Oxus, and had no doubt only an appellative significance. The Nisæan horses therefore came, as it seems, from the frontier of modern Turkestan, a region whence issued, at all times,

the nomadic hordes who invaded the cultivated lands of the East. There, as far as the Jaxartes or Tanais (both Iranic names of the same river), and beyond it, north of the Caspian and the Black Sea, to the European Tanais (Don), Borysthenes (Dnieper), and Ister (Danube), lived the equestrian nomads, Parthians, Massagetæ, Dahæ, Sarmatæ, Chorasmians, Scythians, and other tribes, called by the general name of Sacæ. Ancient authors frequently describe the manners of these tribes with more or less detail. Herodian gives the following of the Neo-Parthians, against whom the Emperor Alexander Severus marched: "They not only use the horse and the bow for war, like the Romans, but they grow up from childhood in the use of them, passing their lives in hunting. They never lay aside their quivers, nor get off their horses, but use them constantly, either against enemies or the beasts of the chase." The Dahæ rode through wide, waterless deserts, halting only at rare intervals; and thus they invaded Hyrcania, Nesæa, and the plains of Parthyæa. The Sacian cavalry was the best in the Persian army. When Xerxes was in Thessaly, whose horses were esteemed the best in Greece, he instituted races between the native breed and those he had brought with him, and his horses proved to be far superior. The Sacian horses were remarkable for enduring the hardships of the desert. One that the Emperor Probus captured from the Alani, or a similar people, "was of very insignificant appearance, but could gallop a hundred miles a day for eight or ten days together." Herds of beautiful animals must have been kept by Scythian princes, as well as in Media, for King Philip, the father of Alexander the Great, took 20,000 full-bred mares from the Scythians at the mouth of the Ister, and sent them to Macedonia for breeding purposes. The horses of the Sigynnæ, a people that lived on the Caspian Sea, are described as resembling in many ways the wild tarpan of Tartary and Mongolia; they were covered with hair five inches long; they had blunt noses, and were so small that they could not carry a rider, but were harnessed to carriages instead, which they drew at a great speed. The Sigynnæ were of Median origin, but their animals had either remained stationary at the earliest stage, or degenerated from it, while the rest of the Sacæ had improved

theirs by mixture with the improved breed in the richer pastures and milder climate of Media. But this Median horse itself had originally come from Turan, the home of those north-eastern branches of the great Iranian stock, which, as far as the light of history reaches, are always found a horse-riding race. Now, as the cradle of the central Indo-Europeans (Aryans) must be imagined as situated in or near that region, we find ourselves again facing our main question—Were *they* roaming tribes of horsemen (like the ancient Turanians) that detached themselves from the parent stock and inundated Europe? or did they, like the Assyrians and Egyptians, receive the tamed horse at a later period from their former home on the sources of the Oxus and Jaxartes?

That the Indo-Europeans were acquainted with the horse is proved by its name *akva*, which is found, with more or less variety of sound, among all the branches of that family; as, for instance, in Sanskrit *açva*, Anglo-Saxon *esh*, Old Irish *ech*, Latin *equus*, and many others; it is only lost in the Slavic languages. The word is derived from the root *ak*, "to hasten," and was applied to the horse as implying its speed, perhaps in contrast to the slow ox. The conception of the horse as of a swift and fleeting animal operates for a long time in many myths and in poetical language. The sun hastens through heaven, and therefore the Persians and Massagetæ sacrificed the horse, as the swiftest animal, to the God of Day. Herodotus says of the Massagetæ: "They worship the sun, and sacrifice horses to that god. The meaning of this sacrifice is the dedication of the swiftest of all earthly creatures to the swiftest of all divinities." Homer calls the sun "untiring," and the same epithet is applied to Notus and Boreas by Sophocles, while Pindar also describes the chariot-horses as "untiring." Mythically the horse is regarded as one with the storm; this comes out very clearly in the fable of Boreas fructifying the mares of Erichthonius; and in Homer the horses fly without bending the ears of the corn, and skim the foam of the grey sea:

> "These lightly skimming, as they swept the plain,
> Nor ply'd the grass, nor bent the tender grain;
> And when along the level seas they flew,
> Scarce on the surface curl'd the briny dew."—ILIAD.

The horse is also called "stormy," "storm-footed;" "more rapid than the hawk," "swift as the bird." The horses of Rhesus "flew like the wind," and those of Achilles were "sons of Zephyrus and the harpy Podarge" (namely, the swift-footed; the harpies are destructive blasts of wind); they "fled with the blowing of the wind;" and one of them says himself:

> "No,—could our swiftness o'er the winds prevail,
> Or beat the pinions of the western gale."—ILIAD.

Æolus himself, the ruler of winds, is called Hippotades, *i.e.*, son of Hippotes (horseman). In the pictures of the northern Edda also, wind and storm are represented as horses. Odin, the god of wind, is carried by his eight-legged grey horse Sleipnir. Winter, represented as a giant, builds a castle for the gods, and is assisted by his horse Svadilfari, or the north wind; but before the ice-palace is quite finished, Loki transforms himself into a mare—the south wind—and entices Svadilfari from his work, so in spring the work is still unfinished, and Thor smashes the giant's skull with his hammer; and so on. In the German legend of the Wild Hunt, at the head of which rode Wodan on his white horse, we have merely the midnight storm transformed into a horse and his rider. The belief prevalent in Roman times, that on the coast of Lusitania mares were impregnated by the wind, may be connected with these ancient representations; Varro, who first mentions it, calls it an incredible but nevertheless true fact.

The horse being thus known to the aborigines, and dwelling in their imaginations as the emblem of speed, so that its very name was derived from that quality, we may imagine the animal, in relation to man, at three stages; either as the mere object of the chase, which flew like lightning and was difficult to overtake; or as an animal for riding, which carried the wandering nomad to his goal, encircling and urging forward the grazing herds; or, finally, as harnessed to waggons, drawing the *kibitka*, and serving the purposes of migration. But the last is improbable, for in this case speed was not the desideratum, but rather powerful muscles and strong necks. The Scythians, though an equestrian people, are described by Herodotus and Hippocrates

as riding in waggons drawn by oxen, and the campaigns and migratory marches of the other European nations are spoken of, when first met with in history, as being accomplished in the same manner. When the Cimbrians lost the battle against the Romans, the women threw their children under the wheels of the waggons and the hoofs of the draught animals, while the men, not finding trees enough to hang themselves on, bound themselves to the legs or horns of oxen, drove the animals in opposite directions, and were thus torn into pieces. The bullock-cart, as a remnant of very ancient tradition, still appears at religious and political ceremonies at a time when all other things were greatly changed. Tacitus tells of the goddess Nerthus riding in a carriage drawn by cows; so with the ancient Gallic goddess, whom Gregory of Tours calls Berecynthia. When a dead Goth was carried to the grave, his funeral car was drawn by bullocks; Gothic and Merovingian kings were drawn to the people's assemblies, and to all places where they appeared publicly, by oxen; and in the same manner were conveyed royal and noble women. On the column of Antoninus two captured princesses are represented riding in a cushioned carriage drawn by an ox; near them marches a bearded man, his hands bound behind his back, escorted by two Roman soldiers. This is quite the rule; women and children in the bullock-cart, the warrior on foot. Traces of the most ancient times are also found among the Greeks and Romans, where bullocks were the common draught animals. The invention of the waggon and taming of the ox must be thought of in one connexion. We learn from the touching fable of Cleobis and Biton, related to King Crœsus by Solon, that the priestess of the Argive Hera used to ride from the city to her temple in an ox-car. In such a carriage Cadmus must have fled with Harmonia from Thebes to the barbarians, and founded in Illyria the town of Bou-thoë (ox-run). The ox alone was employed in domestic and field work, and harnessed to the plough; a house, a wife, and a plough-ox formed the basis of a rustic household.

"But, before all things, a house, a wife, and a ploughing-ox."—HESIOD.

He who has no oxen can move no weight, and says to his

neighbour, "Give me a pair of oxen and thy waggon;" but the other replies, "My oxen have to work for me." A proverb says, "The waggon draws the ox;" the same thing as our "Putting the cart before the horse."

The ox, the fellow-worker of man, was as inviolable as man himself. "And this was the custom in Attica; not to sacrifice the ox, who bore the yoke and toiled at the plough or waggon, for he too was a countryman, and shared the labour and toil of man." A saying of Pythagoras runs as follows: "Lay not thy hand on the ploughing-ox." Among the Homeric Greeks the horse was used only in war, and in exactly the same way as among the Oriental nations; it was not ridden, but harnessed to the chariot. Riding, of course, was not unknown to the Homeric poets, as indeed how could it be? When the storm has shattered the raft that much-enduring Ulysses had made on Calypso's isle, he escapes on a plank, sitting on it as "on the back of a racer." When Diomed and Ulysses steal the horses of Rhesus by night, the former wants to carry off the chariot of the murdered king; but, on the advice of Minerva, the heroes mount the animals instead, and hasten back to their ships. Under the circumstances described this was most natural; how often they must have seen the boy who took the animals to water doing the same! In another scene in the Iliad a man has chosen four swift animals from a herd grazing at liberty, and has to take them along the high-road to the town; he mounts and leaps, while at full gallop, from the back of one to that of another, to the admiration of all beholders. With the exception of these few cases, from which we cannot infer real riding in the present sense of the word, the horse, in Homer, serves only to draw the chariot. The combats before the walls of Troy are conducted in just the same manner as those we see depicted on the walls of the palaces at Koyunjik or Khorsabad. The light war-chariot has one axle and two eight-spoked wheels, is drawn by two horses harnessed to the pole, and brings the hero up to his enemy, when he leaps down and hurls his spear or draws his sword. The horses wait till the moment comes to take their master back to his comrades. The warrior is accompanied by a friend and companion, who stands at his left

side as charioteer; while the one fights in armour with shield and lance, the other directs the steeds. Sometimes a whole squadron of chariots advances in line to the attack, as in the fourth book of the Iliad, where Nestor places his men so that the chariots are in front, the strong foot-men in the rear, and the weak in the middle; giving orders that no charioteer is to press forward, or lag behind, for in that way, long ago, towns and ramparts had been forced:

> "Our great forefathers held this prudent course,
> Thus rul'd their ardour, thus preserv'd their force;
> By laws like these immortal conquests made,
> And earth's proud tyrants low in ashes laid."—ILIAD.

The Trojans and their allies fought in the same manner as the Greeks, and there is no doubt that the whole form of war and the use of the horse itself had been borrowed from Asia. Ares himself, the God of War, fights either on foot or in a chariot; never on horseback. In the fifth book of the Iliad the wounded Aphrodite, in haste to reach Olympus, borrows of Ares his war-chariot and horses, which carry her swift as an arrow to the abode of the gods. Hence he is depicted on the shield of Herakles, standing on the seat of his chariot, lance in hand, before him his swift steeds, terrible to behold; and Pindar calls him, "Aphrodite's brazen-charioted spouse." Even apart from war, Homer does not describe the horse as used for riding. Thus, in the third book of the Odyssey, we see Telemachus and Pisistratus driving right across mountainous Peloponnesus, from Pylus to Lacedæmon, *standing in their chariot*, not *riding* up and down the passes or in the pebbly beds of the torrents. Their harness and other appointments are the same as those of the warriors on the plain of Troy; beside the hero stands Pisistratus, holding the reins and guiding the horses. When Menelaus, in parting from Telemachus, wishes to present him with three horses and a chariot, Telemachus declines the gift, reminding the would-be giver that Ithaca has neither spacious racing-grounds nor plains; "Not one of the islands lying in the sea is a fit place for driving the swift chariot, and Ithaca least of all." In such countries, therefore, the horse was useless. Again, at funeral games in the most ancient times

there were no races on horseback; the games at the funeral of Patroclus (Iliad xxiii.) consist in chariot-racing, boxing, wrestling, running, fencing, throwing the ball, shooting, and hurling the spear. On the chest, whereon were depicted the celebrated games instituted by Acastus at the burial of Pelias, the artist has not represented horse-races, but only two-horse chariots in mid career, wrestlers, boxers, discus-throwers, and runners.

Those earliest times have only left us very conventional representations of the horse; those of a later period, when art was in its prime, show, in the opinion of judges, the slender Oriental type, not an importation of the aboriginal type from the distant north.

A few features of the oldest form of worship have yet to be mentioned as pointing likewise to Iranian influence. The Persians worshipped rivers by sacrificing horses. When Xerxes arrived at the Strymon, the magians sacrificed white horses to that stream; and in Tiberius's time, the Parthian Tiridates conciliated the river Euphrates by sacrificing a horse. Even so the Trojans were accustomed to throw living horses into the eddies of the Scamander; Achilles says to them—

"Your living coursers glut his gulfs in vain."—ILIAD.

Off the Argive coast there was a spring of sweet water, forming a whirlpool in the middle of the sea. Into it the Argives, in the very earliest time, used to throw horses as a sacrifice to Poseidon. The Rhodians used, every year, to throw into the sea a team of four horses dedicated to the Sun. To sacrifice horses to the Sun, to regard white horses—a sickly, abnormal breed produced by cultivation—as being by this colour sacred to the God of Light, and then as gods' horses in general and as kings' horses, was an Iranian custom and religious fancy, which is found here and there in Greece, and even in Italy. Castor and Pollux, both Gods of Light, ride on snow-white horses; so they appeared, clad in their scarlet mantles, when coming to the aid of Locrians at the battle of the river Sagra. They are wedded to the blithe and shining daughters of Leucippus, whose bright being is revealed in his name. Both Æschylus and Sophocles represent Day rising with white horses, and chasing away Night's dismal round. When

Exænetus of Agrigentum returned home as a victor, he was accompanied by his rejoicing fellow-citizens with three hundred carriages drawn by white horses; and Camillus, after taking Veii, entered the city riding in triumph in a chariot drawn by white horses, which act was blamed by his contemporaries as an encroachment on the rights and glory of the God of Day. The Lacedæmonians sacrificed horses to Helios on the summit of the Taygeton; which custom could not be Phœnician, for the Phœnicians did not use horses in their religious ceremonies. It was rather derived from the Iranians of Asia Minor; and if the original Greeks really arrived at their future home riding the small, shaggy horses of the steppes, all traces of the fact had certainly disappeared before the earliest period known to us.

It is not quite so with Thrace, a land lying north of Greece, and celebrated by Homer for its horses. Homer's account might indeed be purely mythical: Thrace might be the home of the horse as it was of northern storms; the wild waves rushed down from the Thracian sea; the horse symbolized the storm and the white foam of the waves; it was therefore created by Poseidon (Neptune), and used in the games in honour of that god. But the Thracian horses of the Epic look too realistic and historical to be merely mythical. The Thracians had anciently much intercourse with the nations of Asia Minor; and Rhesus, with his horses whiter than snow, his chariot and weapons more fit for a god than a man, is copied from an Iranian spirit of light; it is therefore in the darkness of night that he is despoiled of his horses and his life. Thrace, however, like Asia Minor, lies near the home of the northern horsemen, and the Thracian breed might have come straight from the country of the Hippomolgi (mare-milkers). And in like manner it is probable that the tamed horses of the Slavs, Lithuanians, and Germans were descended from those of their neighbours, the Iranian horsemen.—Of the Slavs, Tacitus expressly says they were not a horse-riding nation like the Sarmatians, that their strength lay in infantry, and he therefore prefers to class them with the Germans. Afterwards, when the Slavs had advanced to the Elbe and Oder on the heels of the retreating Germans, the historians of the Middle Ages mention

a worship of the horse as prevailing among them, which forcibly reminds us of that among the Iranians. They dedicate a white horse to Svatovit, the God of Light, and a black horse to Triglav, the evil one ; the latter horse is never ridden, but the former is sometimes mounted by a priest. Horses are prophetic of good and evil fortune, and the temples at which they are kept become oracles. In the legend relating to the origin of Bohemia, it is a demonic horse that shows the envoys of Libussa the way to Premysl, the chosen ruler. This contrast of light and dark, and the sacred character of the horse, as well as the name for God, *bôgu*, must have been derived from the Sarmatian and Alanian neighbours.—Ancient witnesses describe the LITHUANIANS as drinkers of horse-milk: a custom which, though unknown to the Germans, had spread from the horsemen of the South-Russian steppes to the Baltic. Wulfstan tells King Alfred that "there is so much honey in the land of the Estes (that is, Prussians) that the king and rich persons leave all the mead to the poor, themselves drinking the milk of mares." That this "milk" was distilled and intoxicating, we learn from Adam of Bremen and Peter of Dusburg. In Lithuania, then, as among the Iranians, mares were kept in great herds, and driven together to be milked, to which process the animals gradually became accustomed, especially if they were led to drink at the same time. The milk was fermented, and became an intoxicating beverage much liked by the nobles ; from which last circumstance we may conclude that the breeding of horses was an art derived from abroad. A note on Adam's Chronicle would seem to indicate that even the Goths in Sweden intoxicated themselves on mares' milk; but the milking of mares was never a habit among pure Teutonic races, and the annotator's "Sembi et Gothi" must, as Grimm says, have stood for Samo-getæ.—The cult of the horse among the GERMANS has also some peculiarly Iranian features. Horses were sacrificed to the gods, drew the sacred chariot, and had the gift of prophecy ; the white colour was most sacred, just as among the Persians, Scythians, and other nations. Roman judges considered the German horses insignificant and ignoble. Cæsar speaks of them as small and ill-shaped, though inured to great

labour. Tacitus says they were not conspicuous for beauty or speed. Possibly the type of these horses was very similar to that of the horses of the steppes—"small, swift, and stubborn," as Strabo says of those to the north of the Euxine. The German, like the Slav, was much firmer on foot than on horseback, except perhaps a few tribes to the east, which had associated more closely with the Iranian inhabitants of the steppes. Turning to the other side of Germany, Procopius pretends that the horse was totally unknown to the Germans of the north-west, to the Angles settled in Britain, and the Warnes, whom he places on the Lower Rhine. "These islanders are more warlike than the other barbarians, but they always fight on foot. They do not even know a horse by sight, and the animal is not to be found in Brittia. If one of these people come as ambassador or otherwise to the Romans or Franks, he is incapable of mounting a horse, and must be lifted on. So, too, if he would dismount, he must be set on the ground. Also the Warnes are no riders, but go on foot." At the period of which Procopius speaks, this is very improbable, and perhaps the accounts he made use of referred to the marsh-lands of the north-west, a region impenetrable to horses. Instead of the Angles he should have named the Frisians, and instead of Britain, one of the river-islands of the Continent. But the Batavians, the inhabitants of the island at the mouth of the Rhine, were considered the very best riders among the Germans, accustomed to swim the Rhine on horseback in their armour. Ancient writers also describe the Caledonian horse as being small and insignificant, it was therefore related to the German animal, and represented the old Celtic breed, which, in Gaul, had long since been crossed and improved. Dion Cassius says of the Caledonians: "They have small, swift horses, but also go on foot, walking very fast, and standing very firmly in battle." So the Caledonians too were swift runners, as the Germans and Wends were in comparison with the Sarmatians; and cavalry among them was of secondary consideration in war. Rather did the horseman need a nimble and strong foot-companion, who accompanied him, and came to his assistance at critical moments. This combination of riding and running among the Germans is circumstantially

described by Cæsar: "There were (in the army of Ariovistus) six thousand horsemen, and the like number of very nimble and powerful footmen, whom the former for their own safety's sake had selected from the whole, and with whom they remained in communication during the battle. To these, when necessary, the horsemen retreated; if the battle went ill at any point, the footmen hurried up; if a horseman was wounded and fell from his animal, the footmen surrounded and protected him; if it was necessary to go quickly forward or back, the practice in running of these footmen was so great that they kept pace with the horses, holding on by their manes." Long before that time the Bastarnæ were accustomed to mix such auxiliary troops among their horse; and we learn from some reports that the Gauls, who resemble the later Germans the more, the farther back we penetrate into their history, did not rely on their cavalry alone, but supported those troops by powerful infantry. So, from Gaul to the mouth of the Danube, it was a general North-European custom. It is true that, now and then, we hear of a similar mode of fighting among the Southern nations; but, as will be seen on closer examination, it was of a very different nature. The Iberians rode to battle two on one horse, and then one of the riders fought on foot; and Diodorus says of the Celto-Iberians, that when they had fought on horseback with success, they jumped off and did astounding deeds on foot. The stratagem once used by the Romans in the second Punic war was similar. When Capua was besieged by Q. Fulvius Flaccus, and the Roman cavalry, being fewer in number, were on the point of yielding to that of the besieged, the centurion Q. Navius thought of the following means of putting an end to this shameful state of things; he chose the strongest and swiftest youths out of all the legions, and armed them with long spears; these youths mounted behind the horsemen, and at a given signal sprang off, so that a battle on foot and on horseback was developed at the same moment: the surprise and the wounds received put the enemy to flight. Probably this stratagem was not an impromptu invention on the part of the centurion, but had either been seen or heard of by him among the barbarians or the Greeks. Alexander the Great is said to have invented a

kind of cavalry more lightly armed than the Hoplites, but more heavily than the regular cavalry, and practised in fighting both on foot and on horseback. Like Gustavus's dragoons, this doubly exercised troop was not a product of national custom, but of military art. We might fancy we found this compound system of fighting in the Odyssey, where it is said of the Cicones, a Thracian tribe:

> "All expert soldiers, skill'd on foot to dare,
> Or from the bounding courser urge the war;"

but the expression "from horses" means, everywhere else in Homer, fighting *from the chariot*, and thus the tactics of the Cicones would quite agree with those mentioned in the Iliad. Then why is it expressly mentioned? Because it was something unexpected in a barbarian race? To our surprise, however, this Trojan and Ciconian chariot-fighting agrees with the war-customs which Cæsar afterwards found in use among the Celts of Britain. Like the heroes before Troy, the Celts rolled into battle in their chariots. Cæsar minutely describes their tactics: "First, they ride about in all directions shooting their missiles, and trying to throw the enemy's ranks into confusion. Then having crept in among their own horse, they suddenly spring from their chariots and fight on foot. Meanwhile their drivers retire, and stand ready, if the warriors are hard pressed, to offer them a speedy retreat. So they combine the speed of horse with the steadfastness of foot. Their practice therein is so perfect that they can guide or stop a horse when at full gallop on a steep mountain-side; and run backwards and forwards on the pole, or step on the yoke, and then return into the chariot again in a moment." Agricola witnessed the same manner of battle in the Grampians; and Mela says that the chariots were armed with scythes, a point on which Cæsar and Tacitus are silent. Other historians say that such war-chariots were in use among the Belgians, which leads to the conclusion that, during the great Celtic migrations in the east in the neighbourhood of Iranian and Thracian peoples, the custom had been borrowed from the latter; and that after it had died out on the Continent, it was still preserved in the British Isles like so

many other ancient customs. The scythe-chariot was Asiatic; and driving into battle, as we have seen, was altogether a custom of Assyria, Persia, and Asia Minor.

Poets, in their fancies about pre-historic ages, have sometimes raised the question whether riding or driving was the oldest. Lucretius thinks that for an armed man to mount a horse and guide it with the rein is older than to go to battle in a chariot; and he may be right in this sense, that though the waggon in itself is a very ancient invention, yet it is a far step from the rude, lumbering ox-wain of early ages to the light, swift, elegant, metal-bound and two-wheeled chariot of the Assyrians. The use of the ox as a draught-animal might invite men to train the captured horse for a like purpose; but it was more natural to mount it, cling to its back with hands and feet, and ride it till it grew tired and willing. And, as we have seen, the horse was always a war-like animal, whose value consisted in speed, and the rider only thought of harnessing it to a lightly rolling vehicle, capable of holding himself and a companion, in order to achieve more completely his warlike aims.

If we take all the above data together, we find that nowhere in Europe, neither among the classic nations of the south, nor the North-European nations from the Celts in the west to the Slavs in the east, is the high antiquity of the horse and of its subjugation to man betrayed by any clear traces or undoubted evidence. Many facts, indeed, seem positively to exclude any acquaintance with the animal in early times; for instance, the fact of the Homeric Greeks not riding, as they must have done had they possessed the animal from the first, but only driving, as they had seen the Asiatics do. We have therefore *no ground* for imagining the Indo-Germans (Aryans) in their earliest migrations as *a horse-riding people*, galloping over Europe with loose rein, and catching men and animals with horse-hair lasso. But if the horse did not then accompany them on their great march through the world, it must have been the Iranian branch, which remained near the original point of departure, that learnt the art of riding later; and from whom did they learn it if not from the Turks, who dwelt next behind them, and in course of time drew nearer and nearer?

To those Turks, and to the Mongols beyond them, must be attributed the first capture of the swift, single-hoofed animal of the steppes, and the art of using it for hunting and war. When the Turks first showed themselves to the civilized people of the West, they were a horse-riding nation to an extent till then unknown, not excepting even the Scythians, Parthians, and other Iranian tribes. "The Huns," say the ancient historians (Suidas, Marcellinus, etc.), "fall at every step—they have no feet to walk, they live, wake, sleep, eat, drink, and hold counsel on horseback." Their animals were strong and ugly, and therefore must have come fresh from the steppes of Northern Asia. So Zosimus: "They are unable to set their feet firmly on the ground, but live entirely on horseback, even sleeping on their animals," etc. The steppe was the birthplace of the horse; the yellow sons of the steppe tamed the animal, and, succeeding in that, founded their whole lives upon it. After that their creative power was spent, and when they rode to the west they could only destroy. If, as modern discoveries seems to indicate, Media either had an original Turanian, that is, non-Aryan population, or, being originally peopled by Iranians, was subjugated by immigrant Turanians—the fact would explain how Media became the cradle of horse-breeding and the art of riding for the whole of Western Asia (note 12).

GREEKS, ITALIANS, PHŒNICIANS.

In the earliest twilight shed by history on the Greek peninsula, what we can discern is the following. The nation whose fame, under the name of *Hellenes*, afterwards filled the world, had probably fought its way through mountain and forest from the eastern side of the Adriatic to Dodona in Epirus, with which place posterity connected its oldest recollections and conceptions of ancient worship and primitive life. Here was a halting point, and thence issued the two general national names: that of Hellenes, which prevailed more in the east; and that of Graikoi, which clung to the west of the peninsula, and was accepted by the opposite Italians, but died away in the mother country.

From Epirus the immigrant march, doubtless in avoidance of

wild hordes pressing in from the north, crossed the pathless mountains to Thessaly, where we find a second but still very ancient Dodona; and thence extended over the neighbouring lands, the accessible islands, and the southernmost part of the peninsula, which is almost entirely surrounded by the sea.

At a much later period, when the small tribe of Dorians, leaving its home on Parnassus, had victoriously overrun the Peloponnesus, the preparatory time of unstable migrations and mingling of races ceased, and the populations of the peninsula permanently took possession of the settlements in which history has since accustomed us to see them.

Everywhere, before the true Greek age, we must imagine a former period of the *Pelasgians*, a name in which either a former age and elder civilization has been personified (the name probably meaning *forefathers*, the *grey in age:* note 13), or in which the memory of a branch of the same nation, which preceded and was afterwards absorbed by the Greeks proper, has been preserved. What happened to the Pelasgians, happened also to the early extinguished races which we may comprise under the name of Leleges (probably meaning selected, in another form Locrians), and which may be traced, as scattered remnants of Western Greece, across the islands to isolated points on the coast of Asia Minor. Like the Pelasgians they formed part of the first great immigrations, and were scattered, or subdued, or driven across the sea, by multitudes pressing on their rear. As far as we can make out, their starting point was Acarnania and the opposite islands (note 14). At this earliest period the division of the nations is not at all clear, and we find transitions on every side. Progressive civilization first created the contrast between Barbarian and Hellene. Races ethnologically akin, but which had stood still at earlier stages of culture, and whose dialect was no longer understood, seemed now to be of doubtful or foreign blood. Among such half-Hellenes of intermediate position were numbered the Ætolians and Acarnanians; farther north the Thesprotians and Molossians in the once Greek Epirus; and on the opposite side, the afterwards great and famous Macedonians, a name which signifies *tall people*, just as Minyæ means *little people.*

These formed the connecting links to two widely spread nations, the *Thracians* to the east and the *Illyrians* to the west, which in fact belonged to the Indo-European family, and were therefore not absolutely foreign to the Hellenes, but, by long separation and diverse fates, were already at such a distance that when the two met they had no longer any sense of kinship in blood or civilization. It is a matter of doubt whether these two great races followed south of the Danube in the wake of the primitive Greeks after these had penetrated into their own peninsula, or whether the latter pushed their way, fighting, past the former. Pott, in his "Inequality of Human Races," is of the latter opinion. It is of no small detriment to the elucidation of the early history of Indo-Germanism in Europe, that the languages of both those nations are lost to us for ever—languages which would have afforded a key for solving so many problems concerning the dispersion, the course of migration, and the successive arrivals of the principal members of that system of nations. For the Thracians, together with the kindred Getæ and Dacians, and the Illyrians with their branches, the Pannonians and Veneti, form the central mass from which numerous connecting threads spread to all sides. They were closely allied to the Greeks and also to the Phrygians, and through the latter to the Armenians and the Iranian races; with the last, indeed, they were besides directly connected through the Scythians and Sarmatians; some not insignificant traces also point to a connexion with the Lithuano-Slavs and Germans in the north, and the Celts in the west.

An important link in the chain of languages and nations being thus missing, we are reduced in our grouping of the same to isolated observations, which may be valued by different persons in different degrees. Of one of those languages a valuable remnant at least seems to be preserved in the Albanian dialect; but this idiom exists only in its modern and much disfigured form, having been deeply influenced by surrounding tongues both in ancient and modern times. It is often doubtful what must be attributed to primitive affinity and what to foreign influence, and all this together has hitherto prevented comparative philology, which has enough to do elsewhere, from attempting any extensive excavation in this field, though perhaps it hides much that is valuable (note 15).

The Thracians (the name seems of Greek origin, meaning the rough or mountain folk) had early experienced the effects of Asiatic culture, and their southern branches in their turn influenced the north of Greece; the Illyrians lead us on the opposite side to the sister peninsula, Italy. There, under the name of Veneti, Heneti, or Eneti, the Illyrians had not only occupied the country at the mouths of the Po and other Alpine rivers, but, as many traces of names prove, and as direct evidence confirms, had extended at a very early time along the whole of the eastern coast down to the southern point of the peninsula, without, however, crossing the Apennines. The Messapians and Japygians in the south-east of the peninsula, together with the neighbouring peoples, may also be reckoned as belonging to the Illyrian stock.

Along the great pathway of the nations, round the Venetian Gulf, either pushing the Italo-Illyrians to one side and before them, or, *vice versâ*, pressed forward by them to the south and south-west, the *Italians* proper advanced into the peninsula. This people, as is evident to an unprejudiced mind, had separated comparatively late from the primitive Hellenes. Among the subdivisions into which it parted on the new soil, and which perhaps owed their existence to the shocks of successive intermittent immigrations, the Latins settled in the plain south of the Lower Tiber, and on the adjoining volcanic hills. The Sabellians advanced along the ridge of the mountain-chain itself; the Umbrians extended from the Lower Po and the plains skirting the Adriatic Sea, across the peninsula to the western coast; and, close to them on the north-west, in the mountains that descend to the Gulfs of Genoa and Spezzia, settled the Ligyans or Ligurians, a non-Italian people. Whether the immigrants along the west coast of Italy, down as far as Sicily, found Iberians and Libyans settled there, whom they drove away or destroyed, is a thing more to be guessed at than asserted or denied. But the Umbrians, at a very early period, were split into groups and subjugated by a new inroad from the north; the mysterious, but probably Aryan, *Etruscans* settled themselves firmly, from the Alps to the Tiber, in all the upper half of the peninsula, and became powerful on the sea, afterwards advancing even to Campania, until they were more and more

limited and weakened by the Celts, who, breaking in from beyond the Alps, took permanent possession of the plains of Upper Italy.

But meanwhile the warlike, roving, and reiving pastoral nations of both Greece and Italy had gradually turned their attention to husbandry, and thereby taken the first and mightiest step on the path of humanity. That in the Greco-Italian period *before* the immigration, nay, that even in the heart of Asia, they had cultivated the ground and fed on the fruit of Demeter, has often been asserted with more or less probability; but the proofs brought forward in support of the assertion are scarcely tenable. A comparison of the names for spelt and barley only shows that at a time when the Greeks, Lithuanians, and Germans were yet united, certain grain-bearing *grasses* were known by names common to two or more nations. The language of a pastoral nation must naturally have been rich in names for plants and grasses. There is only one word-root (Grk. *arŏ-*, Lat. *arā-*, Lith. *ar-*, Goth. *arj-*, to *ear* or plough) that might be taken as proof of an acquaintance with ploughing and the plough, before the dispersion of the nations over Europe. The long migration from the regions beyond the Sea of Aral must have been interrupted by intervals of repose, during which, according to their longer or shorter duration, the beginnings, but only the beginnings, of the art of husbandry were possible. As soon as the love of change revived, the hard and tiresome labour of turning up the sod, so hateful to all pastoral peoples, was once more neglected, leaving behind it only a general acquaintance with the art. We may therefore presume that the Græco-Italians were only acquainted with the half-nomadic husbandry still to be found among the Bedouins, the nations beyond the Volga, and elsewhere. The original plough was a piece of naturally bent wood, such as was sought and found in the forest, and still known as late as Hesiod; while the different parts of the *constructed* plough, mentioned both by Homer and Hesiod, have quite different names in Greek and in Latin. We must infer that the plough was invented, or derived from a foreign nation, only *after* the separation of the Greeks and Latins in their new homes (note 16). The plant which they cultivated may have been millet, which was a kind of grain very early common to both East and

West. Side by side with millet we often find the turnip and bean, two very ancient fruits, called by common names, and the planting of which probably preceded the art of husbandry (note 17).

However that may be, when the restless pastoral nations found a settled abode in the sea-bordered lands of Greece and Italy, when the old roving spirit sobered down into purely local flittings and fightings, then those

> "Who settled close to the sea,
> Or in the vale far from its foaming waves;
> And, at the foot of the gloomy ravine,
> Turned up the fruitful soil"—HESIOD.

must have been tempted by the rich black soil and favourable skies to cultivate corn. The Pelasgians became a peasant people, bending their faces to mother earth, and gaining their livelihood by the cultivation of the ground; goading the ox before them, and sweating under the "labour imposed on men by the gods" (Hesiod). The shepherd, who clung to the forest-clad mountains, rejoiced in greater freedom. Shy of work, and rapacious like all shepherds, he attacked the dwellings, fences, and barns of the husbandmen; and, on a small scale, the same conditions ruled which, on a large one, ruled between Iran and Turan, between the Gauls shortly before Cæsar and the Germans, and afterwards between the Germans and Hungarians.

Thus human wants led to solid dwellings, walls, and forts on the heights—protective works to shield the fields against the wild neighbours of the mountains. So in many parts of Greece, under the names of *Ephyra* (watch-tower), *Larissa* (more correctly *Larisa* = endowed with fat soil; Larisa is the daughter of Piasos = fat; and in the Thessalian Larisa rule the Aleuades = thrashers, pounders), and *Argos* (fruit-plain opening towards the sea), we meet with solid settlements of husbandmen and builders from the dark to the historic ages.

While the kindred nations in the north continued their unsettled mode of life, the Græco-Italian races settled down comfortably in their new and splendidly furnished home, waiting for the impulse that should rouse them from their natural dulness and launch them on an endless career of culture. This impulse

was given by their contact with the SEMITES, a clever race in comparison with the heavier Aryan nature, rich in the power of abstraction and already far advanced in many arts of civilization. Sidonian Phœnicians, in company with Carians, had occupied the islands of the Ægæan Sea perhaps as early as the thirteenth or fourteenth century B.C. According to their custom, they had taken possession of small islands and isolated promontories along the edge of the continent, as being commodious and safe points for trade and manufacture; from the more northerly islands they had crossed over to Thrace, and had there come in contact with immigrant Phrygians; they ruled in Bœotia and Attica (remember the legends of Europa and of the Athenian tribute to Crete); and from the island Cythera, a very ancient seat of Phœnician culture, they made good their footing on the opposite Lacedæmonia, occupied Corinth, where Aphrodite (the Phœnician Astarte) and Elis, where Herakles (the Phœnician Melkarth), were anciently worshipped; and perhaps even went up the coast of the Ionian Sea as far as the Ætolians, Thesprotians, and Illyrians. At suitable places they carried on purple-fisheries and dye-works; they dug mines, and engaged in profitable commerce with the children of nature who lived around their factories, a commerce in which, after the fashion of the most ancient and also modern times, cheating and robbery went hand in hand. What the natives could give in exchange was naturally only the produce of their herds and forests, such as hides, wool, wood, wild honey, cattle, and sheep, also strong youths and beautiful maidens—that is, slaves. What they received was of many kinds: all sorts of trinkets that tempt savages—images, boxes of bronze or glass, ready-made clothes (*chiton* and *tunica* are Phœnician words), iron and other metal tools, knives, and weapons; the products of various handicrafts; the mechanics of masonry; mythical stories, ideas of West-Asiatic religious symbolism and cruel rites of sacrifice. It is true that the foreign element, which must have been numerically weaker, was gradually absorbed by the nationality of the natives, and as a separate existence died out; it is true that after the Dorian Migration enterprising emigrants streamed out of Greece in repeated sea-expeditions, passing from island to island, then to

single points of the Carian and Lydian coast, and thence again to others, even peopling and subjugating the once Semitic islands of Crete and Rhodes; it is true that, during this period of a Greek occupation of the Ægean, Phœnicians from Tyre no longer appear on the Hellenic shore except as merchants, and in single ships. But many ideas and much knowledge derived from them were not rooted out when they were driven away or assimilated; they remained behind as a half-intelligible religious cult, as a national custom whose origin was soon forgotten, or as a valuable and productive possession in implements, inventions, and modes of cultivation. Who shall decide whether the Greeks had brought with them the knowledge of the potter's wheel, of the loom and spindle; or whether that knowledge was obtained from the Carians, Lydians, and Phœnicians (note 18)? whether the words denoting metals and many trade terms did not also originate among those peoples (notes 19 and 20)? Phœnician sanctuaries had been adopted by the Greeks and gradually transformed by the more liberal Hellenic spirit without ever entirely losing their original type; Asiatic trees which surrounded the ancient places of worship, branches and flowers that had served as ancient symbols, continued to propagate in their new home. The wine that first came from across the sea, the sweet dried fruits, the fragrant oil, might take root and flourish in the land itself; and if some beginnings of such culture died out again in Hellas proper, they were revived by their own colonization of the East—they flowed back to the mother country from Crete and Rhodes, from Naxos and Thasos, and from the new settlements on the Anatolian coast. Semitic cultivation of the olive, the vine, and the fig found a home on the hills that bordered the sown field; and the plantation that constantly required a nurturing hand found a place beside the field that was merely ploughed with oxen, sown, and then left to the care of the heavenly and subterranean gods. As if by a miracle, a picture of the manners, occupations, and ideas of mankind at that period has been preserved to us in the Homeric poems; but, full of light as that picture is, it leaves many riddles unsolved, and though it seems to bear faithful witness, it must be accepted with great caution. For in the epics of Homer and Hesiod all is not equally

valuable; *naïve* songs with genuine legendary contents and the clever work of later revisers and imitators, poems full of antique faith and later productions of profane rhapsodic skill, are more or less deftly, and with more or less probability, all enclosed in one frame. It is necessary to fix our eyes upon the most ancient portions as far as they can be recognised; what lies behind Homer is wrapt in an obscurity which is only now and then illuminated by some passing ray from the science of language or from the religious myth.

THE VINE.

(VITIS VINIFERA.)

We find wine in general use among the Greeks of Homer, and in that poet's works wine is looked upon as a natural gift of the country. Calypso, on the departure of Ulysses, gives him bread, wine, and clothes, the three first necessaries of life. In bread and wine lie the strength of men, and the gods are distinguished from mortals by their needing no food and drinking no wine. Little children are reared on wine; Phœnix the son of Amyntor gives food and drink to the infant Achilles, cutting up his meat and holding the wine-cup to his lips: full oft have his garments been soiled by the boy bringing up in childish fashion what he has drunk. Young ladies and their maids drink like the men; when Nausicaa goes to wash linen on the sea-beach, her mother provides her not only with meats and cates, but also with wine in a goat-skin (note 21).

In the eighteenth book of the Iliad we find figured on Achilles' shield, not only fallow-fields and crops ripe for the harvest, with other scenes of rural life, but also a vineyard in which the vintage is being joyfully gathered. As with the Greeks, so with the Trojans: Hector, encamping with his hosts on the river-side, causes the horses to be unharnessed and fed, and oxen and sheep and delicious wine to be brought for the men. Grecian towns and districts are described as rich in vines. A number of ancient towns and districts derive their names from the vine and vine-culture. If we inquire at what place in Greece the cultivation of the vine was first commenced, the answer seems to be given in numerous legends relating to the origin of the vine; but such legends generally melt away under examination into a mere mythic symbolism of the budding, blossoming, and withering of the plant, or of the antagonism between the novel fetters of civilization

and the rude and free forest life of shepherds. In one legend, Southern Ætolia is the birthplace of the vine; there, a dog (Sirius, the hot season) bore to the son of Deucalion, Orestheus (man of the mountain), the end of a branch; he buried it in the earth, and from it grew a vine rich in grapes; therefore he gave his son the name of Phytios (planter), and the son of Phytios was Oineus, named after the vine. Exactly the same thing is told by the neighbouring Locrians as having happened to them; and their surname of Ozolæ is derived from the sprouting of the first vine-stock. In the Iliad the Ætolian Oineus represents the genial culture of the vine. He refused to sacrifice to Artemis, and was therefore pursued by the destroying boar. His brothers are Agrios (the wild) and Melas (the black, foul), that is, the goatherd, which name is the same in sense as that of Melantheus, the wicked goatherd of the Odyssey. His son, the hunter Meleager, who saves his fortress from the besieging Curetes, is the husband of Cleopatra; Cleopatra's mother, again, is Marpessa (the female brigand), whose parents are Idas (the wooded mountain), and Euenine (the daughter of the Ætolian river Euenos). So in the Calydonian legend of the wine-man as given by Homer, we see not only the rivalry of hostile races, but also that of the different modes of life they lead. In many other places besides Ætolia, the vine was said to have been first created or given to man by Dionysus (Bacchus); thus, in the Attic *demos* Icaria, to Icarius, who is both father of Erigone (the Spring-born) and master of the dog Maira (the twinkler = Sirius), and a multitude of transparent legends, and of cheerful or awful festivals in different places, celebrate the memory of that god's birth, adventures, sufferings, and glorious deeds.

But Thrace, more than all other places, seems the principal home and point of departure of the worship of Dionysus. There was situated the oldest Nysa, that mentioned by Homer:

> "Bacchus, and Bacchus' votaries he drove
> With brandished steel from Nysa's sacred grove."

Thence wine-laden ships came daily to the Greek camp before Troy (note 22); then Ulysses received from Maron (note 23), the priest of Apollo, and the son of Euanthes, that is, of Dionysus

himself—the delicious wine with which he intoxicated the Cyclop. A remarkable passage in Herodotus mentions an independent and warlike Thracian mountain tribe, the Satres, who possessed a Dionysian oracle. The worship of that god penetrated into the interior of the country up to the Hæmus mountains. Doubtless this Thracian wine-god originated in the opposite Asia Minor, with whose customs and religions military inroads had early made the Thracians acquainted. The great invasion of Mysians and Teucrians, for instance, which Herodotus places before the siege of Troy, may have introduced Sabos-worship, the vine, and the art of fermenting the juice of the grape, to the wild Thracians, "the worshippers of Ares," for Mysia was celebrated for its wealth of grapes. The representations of a suffering and then triumphant God of the Sun or Year; the heart-breaking laments and furious mirth with which the Thyiades celebrated his death and resurrection; the double character in which Dionysus and Apollo, or Ares and Dionysus, melt into one; this, with all that holds of it, smacks of Phrygia and of Western Asia in general.

In the Thracian, as in the Ætolian myth of Bacchus, through all the symbolism of nature we get glimpses of a contrast in culture, of an antagonism of rival races. Homer's Lycurgus, who pursues the nurses of Dionysus in sacred Nyseïon till the terrified god himself takes refuge in the depths of the sea, may indeed, like Pentheus in Bœotia, be an image of winter; but, as "krateros Lyko-orgos" (the stern wolf-man), as a son of Dryas (the forest), as "andro-phonos" (man-slayer), with the ox-felling axe (note 24) in his hand, he is the bloodthirsty Thracian mountaineer, who affrights the peaceful vine-dresser by his sudden attacks, and will not tolerate the new-fangled religious rites. In this sense we explain that passage in the Odyssey where Maron, the priest of Apollo, rewards the hero not only with gold and silver, but with twelve amphoræ of wine, for *protecting* him and his wife and child:

> "Him and his house heaven moved my mind to save,
> And costly presents in return he gave, ...
> And twelve large vessels of unmingled wine,
> Mellifluous, undecaying, and divine!"—ODYSSEY.

But the use of wine, and the religion that saw in wine all the fulness of nature, spread throughout Thrace, and with the Thracians it moved further south; filled Macedonia, where the Mimállones and Klodónes (bacchanals) raved; reached Parnassus and Delphi, whence Apollo only by degrees dislodged his brother-god; it passed on to Thebes, where Semele, the goddess of the earth (note 25) bore to Zeus her glorious son; to Mount Cithæron in Bœotia; and, personified as Eumolpus, to Attica, and Eleusis in countless ramifications elsewhere. But this stream of culture, from the very first, encountered one originally identical but coming from the opposite direction, that of the Phœnicians or Caro-Phœnicians. The coast of Thrace was an old haunt of Phœnician colonization and commerce; Phœnicians had first opened the gold-mines on Mount Pangæus, occupied the isle of Thasos, rich in gold and wine, and thence founded emporiums on the coasts of Thrace and the Hellespont, which their successors the Parians had much difficulty in maintaining. Wherever the Phœnicians landed, they would tempt the barbarians to trade with them by offering the wine they had brought with them; and where they settled permanently they would compel the aborigines to cultivate the vine. From Crete, a centre of Phœnician colonization, this culture and the legend attached to it found their way to the islands of the Ægæan, to Naxos, Chios, and farther still. Fr. Osann's "Œnopion and his Kin" shows that the diffusion of viticulture through the Hellenic world was personified in the story of a Cretan family travelling by way of Naxos to Chios, which then becomes the centre of an improved culture, and of numerous colonies that propagate the vine. Now, according to a tradition as old as Hesiod, even the Thracian Maron of the Odyssey was a son or grandson of this Œnopion; and thus the two branches or outlets of Greek wine-cultivation meet in one (note 26).

That wine reached the Greeks through the Semites we learn from the identity of name (Hebr. *yain*, Ethiop. and Arab. *wain*, Gr. *voinos*, Lat. *vinum*). The course taken by civilization makes it extremely improbable that the Semites should have borrowed the word from the Aryans; that is, from the Græco-Italians, for the Iranians have it not. Attempts to show from Sanskrit that

wine was an original possession of the unseparated Aryan races have fallen through, and, in the eyes of the unprejudiced, only prove the contrary. The true home of the vine, which is the luxuriant country south of the Caspian Sea, was also, as far as can be historically determined, close to the cradle of the Semitic race, or of one of its chief branches. There in the woods, the vine, thick as a man's arm, still climbs into the loftiest trees, hanging in wreaths from summit to summit, and temptingly displaying its heavy bunches of grapes. There, or in Colchis on the Phasis, in the countries lying between the Caucasus, Ararat, and Taurus, the primitive methods of cultivation we read of in the works of the Greeks and Romans are still practised; for instance, the dividing of vineyards by cross-paths running from north to south (*cardo*) and east to west (*limes decumanus*); the pitching or chalking of the amphoræ, the burying of them in the ground, etc. There grow the spicy, orange-yellow wines of penetrating odour, and the precious Cachetian grape yields a juice so intensely dark-red that ladies write their letters with it. From those regions the vine accompanied the teeming race of Shem to the lower Euphrates in the south-east, and to the deserts and paradises of the south-west, where we afterwards find them settled, and developing the peculiar civilization which succeeded the Egyptian and long preceded the Aryan. To the Semites, then, who even invented the distillation of alcohol, who accomplished the gigantic abstractions of monotheism, measurement, money, and alphabetic writing (a kind of mental distillation, on the threshold of which the Egyptians had halted), belongs also the dubious fame of having arrested the juice of the grape at the stage of fermentation, and so produced an exhilarating or stupefying beverage. From Syria the cultivation of the vine spread to the Lydians, Phrygians, Mysians, and other Iranian or half-Iranian nations which had in the meantime moved up from the east. Thus it entered the Greek peninsula from the north, while at the same time Phœnician commerce, Carian colonies, and also old Greek communities that had crossed from Europe to Asia, brought the wonderful invention, and in time the plant itself, direct by sea. At the time of the Homeric Epos and Hesiod's poems, its introduction had long been accomplished and forgotten,

the existence of the vine and of wine was taken for granted, and attributed, like all the blessings of life, to the instructions or the creating hand of a deity.

The earliest voyages of the Greeks to the west must have introduced the intoxicating beverage to the Italian coast, for that wine came to Italy from Greece is proved by the word *vinum*, its neuter form being accounted for by imitation of the accusative *voinon* (note 27). The Greek sailors found a simple shepherd folk, on whom the foreign wine had the same stupefying effect as on the Centaurs mentioned by Pindar: "When the Pheres became acquainted with the man-subduing power of sweet wine, they hastily pushed the white milk from the tables, drank out of silver horns, and wandered helplessly about." That in Latium milk was older than wine is proved by ordinances attributed to Romulus, according to which white milk, and not wine, was to be poured out to the gods; and Numa decreed that wine should not be sprinkled on the bier, which shows that wine was not yet in use at the oldest funeral ceremonies. For there was a time when the Romans only practised agriculture, and the cultivation of the vine had not yet been introduced. It is remarkable that in that country, as in Greece, legends of battles between the nations are connected with the introduction of the vine. A much noted legend relates that Mezentius, King of Cære, demanded of the Latins the first-fruits of their vineyards, or the first wine from the press; but that they vowed these things to Jupiter, and so won the victory over the wicked tyrant. The rule of the Etruscans in Campania and Latium was probably broken by an alliance of the Greeks and Latins; and the faint remembrance of this victory got mixed up with that of the introduction of Greek viticulture and that of the institution of firstfruits to Jupiter Liber and Venus Libera. The 19th of August, the day of the foundation of two temples to Murcia and Libitina, goddesses of the harvest, now also became the day of the *vinalia rustica*, which was preceded on the 23rd of April by the *vinalia priora*, both feasts connecting the younger cultivation of the vine with the older cultivation of the field. It was natural that Jupiter should be the patron of the new gift, and that his priest, the Flamen Dialis, should consecrate the harvest;

for all fecundity and fruits of the earth were attributed to that god. The surname Liber, which makes *him* the god of wine, is a translation from the Greek; the Greek genealogy, which made Bacchus a *son* of Jupiter, had not taken root in Italy. The vine soon grew so luxuriantly on the mountains of South Italy, that already in the fifth century B.C. Sophocles calls Italy the favourite land of Bacchus, and Herodotus calls the southern point of Italy the land of vine-poles—*Œnotria.* Œnotria was the land where the vine was trained on poles, in contrast with Etruria and Campania, for instance, where it twined round trees; or Massilia and Spain, where it was cut short and left without support; with Brundusium, where it spread roof-like over trellis-work or cords; or Asia Minor, where it crept upon the ground. These different methods of training resulted partly from the nature of the soil, which was either rocky and hot or damp and rich in *humus*, partly from the want of sufficient wood or cane, and partly from the habits of those by whom the cultivation had been introduced, and the kind of grape they brought with them. The abundance of timber in the country afterwards called Lucania and Bruttium—also called Italia from the cattle-breeding connected with those woods—may have led to the general use of proper vine-poles, and the name Œnotria may have been given by those Greeks who were accustomed to train the vine freely on the ground or on trees (note 28). In the districts at the mouth of the Po the vinestock must have been introduced very early by Greek maritime commerce, although the low and damp ground seemed little favourable to its cultivation. Even Strabo was surprised at the co-existence of marshes and flourishing vines. The vine grew well near Ravenna, bearing the heat and rains, nourishing itself on the mists, and yielding abundance of wine, and the same is remarked of other northern grapes. Wine in Ravenna was cheaper than water, so that the poet Martial says he would rather possess a tank of water than a vineyard, and complains that a cheat of a publican has sold him pure wine instead of wine and water. Picenum, where the geographical names and other things indicate that it was anciently connected with the mouth of the Po, is very early described as rich in wine. We read in Polybius that Hannibal cured the horses of his army

with the old wine of that country, of which there was an abundance; and long afterwards the wines of Picenum were still exported to Gaul and the East. There grew the celebrated Prætutian grapes, resembling the Istrian, and were identified by Pliny with the Pucinian grapes that grew on the river Timavus near Aquileia. The Picene vine had therefore been propagated from the old Greek times along the west coast of the Adriatic to the very head of that gulf. Polybius, who speaks as an eye-witness, praises the wine of the extensive and fertile plains that stretched from the Po to the foot of the Alps. Most likely the vine grew there already when the Celts invaded Italy, tempted by its southern wines and fruits. Martial speaks of the vine-covered slopes of the volcanic Euganean hills near Padua. The Rhœtian wines, that is, the wines of what is now Tyrol and Valtelin, were anciently celebrated. They really owe their immortality to Virgil, who considered them only second to Falernian wine; but perhaps he eulogized the Rhœtian wine because Augustus particularly liked it. Strabo joined in the song of praise, most likely echoing Virgil. The district of Verona, too, was celebrated long after for its wines.

Cato was of opinion that of all kinds of culture that of the grape was the most profitable; and during the last years of the Roman Republic, Italy had become such a wine country that the relation between wine and corn was reversed; wine was exported, and corn imported. But the cultivation of the vine had also long since begun to cross the borders of Italy and make itself at home in the north and west. Columella quotes from an older writer on agriculture, Saserna, the opinion that the climate had changed, for districts formerly too cold to produce oil and wine had now a superfluity of both. The truth is, the cultivation of these plants constantly spread northward, not because the climate changed, but through gradual acclimatization. In modern times—compared to the Middle Ages—the reverse has taken place; the cultivation of the vine has retired from the northern districts, where it had ceased to be profitable. Northern France, the southern counties of England, Thuringia, and Brandenburg, etc., once produced wine; but with progressing commerce it became

more convenient to purchase the wines of more favoured countries in exchange for the grains which their own soil brought forth in greater plenty and with greater certainty. But the introduction of the vine into France, occurring within historical times, and known to us from scattered notices, probably affords a fair picture of the processes by which it was introduced to the peoples in the interior of Italy centuries before. The first vinestock on Gallic soil was doubtless planted by the hand of a Massiliote; the vine flourished on the hills around Massilia (Strabo). The mode of culture was the same as that common in Asia Minor, without props or poles. Then the colonists, spreading eastward and westward, propagated this industry along the coast. The natives—Ligurians, Iberians, and afterwards Celts—bartered the raw products of their country for wine, just as in later times the inhabitants of Aquileia bartered their oil and wine for Illyrian slaves, cattle, and skins. At first it was only the rich that drank the Italian and Massilian wines, while the poor continued to use the national drink made of fermented grain. Gradually the new culture spread into the interior; the more distant tribes learned to cultivate the plant themselves, and transform the juice of the grape into wine; till at length the Romans, who were not only a nation of warriors, but of shrewd traders, began to be jealous, and in the interests of Italian exportation made it a condition of peace with the Transalpine tribes that they should abstain from cultivating the vine and olive. "Pretty specimens of justice we are!" says Cicero, in an outburst of honest indignation (De Repub. 3, 9, 16). Even when the region between the Pyrenees, Cevennes, and Alps had become *Provincia Narbonensis*, wine was still largely imported from Italy. This is proved by Cicero's speech in defence of Fonteius, who had actually ventured to levy a toll on *Italian* wines.

Then followed Cæsar's conquest of the whole country as far as the North Sea and the Rhine, after which Roman civilization, manners, and customs inundated the land. In the first century of the empire, Gaul appears already as an independent and rival wine country, with its own peculiar growths of grape and wine, though not without indications of a culture but recently adopted and still young. At that time Gaul stood in relation to Italy as Italy

had stood in primitive times to Greece, and Greece before that to Syria, Phrygia, and Lydia. Gallic wines pleased the Italian palate. Burgundy was drunk, though not under that name. It tasted of pitch (as some Burgundy does now), and was indeed artificially treated with resin and pitch. It was much appreciated at home, but was also exported to Italy. Gallic varieties of grape, which had been produced by transplantation to new soils, were transmitted to Italy and propagated there. The virtues ascribed to these Gallic vines entirely consist in greater resistance to an unfavourable climate, productiveness even on poor soil, and endurance of cold, rain, and wind; they all bear abundance of fruit, and yield a large quantity of must; they easily degenerate when removed to another soil, and have therefore no stable character; the grape called *helvennaca* does not thrive well in Italy, but remains small and easily decays; the aroma of the Allobrogian wine is rapidly lost, and so on. It was owing to this want of durability that the wines of Massilia, which somewhat resembled the present Cette wines, were smoked in the Grecian manner; and the Provence wines in general came into the market not only disfigured by smoking, but by the addition of herbs and spices. The ancients had recourse to all sorts of means, such as boiling, smoking, and mixing, because they were not yet acquainted with brandy, by which our sherries, ports, marsalas, and other southern wines are kept from spoiling. It was in the natural course of things, that during the empire the culture of the vine should not only become permanent in Gaul, but be extended to the valleys of the Garonne, the Marne, and the Moselle, though it did not as yet cross the Rhine. But, if not the vine, yet wine itself soon became known to the neighbouring Germans, who by their acceptance of this product concluded the fateful compact with Gallic-Roman civilization; while the more distant tribes, from their so-called sense of liberty, that is, from their adherence to the half-nomadic hunting and pastoral life inherited from their forefathers, refused to admit so suspicious a gift. (More than a thousand years later it fared with the Germans in Norway as once with the Romans in Germany—*they* were now the southerners who introduced wine, corrupted the people, and were therefore

refused admittance into Bergen by King Sverris). However, the cultivation of the vine in the Roman provinces threatened to choke the cultivation of grain to such a degree that the Emperor Domitian, in an excess of anxiety, ordered that half and more than half of all the vineyards outside Italy should be destroyed—which order, naturally, could not be carried out. Prohibition of the Oriental custom of castration being issued about the same time, Apollonius said that the emperor spared men but eunuchized the earth. In Ionia, and Asia generally, the execution of the above-named order was warded off by an embassy (note 29). But the cultivation of the vine in the provinces must always have been regarded unfavourably by Italy, for it is recorded specially of the Emperor Probus, that he *permitted* the provinces of Gaul, Spain, and Britain (according to others, Gaul, Pannonia, and Mœsia), to possess vineyards and make wine. So drinkers of Tokay may toast the Emperor Probus, who had a short reign, but is become a legendary hero—a sort of wine saint.

Less eulogized in song, but not less important, is another product of civilization, introduced into Transalpine Europe from the south at the same time as wine—we mean *vinegar:* French, *vinaigre* (sour wine); Gothic, *akeit* (from *acetum*); Anglo-Saxon, *oced*; Pol. Wall. Bulg., *ocet*, etc. The Russian and Lithuanian names for vinegar, *uksus* and *uksosas*, were derived from the Greek, that is, from Byzantium, though there is now no country with a greater partiality to everything sour than the wide tract from the Carpathians to the Chinese Wall. Vinegar mixed with water was a common beverage among the Italian people and in the Roman camps, from which it may have spread into the barbaric countries.

If we compare the present condition of viticulture with what it was in ancient times, we find that it has in some degree followed the general course of history; that is, it has declined in the countries of its origin, and stands at the highest point of development in those countries where it was introduced the latest. When Western Asia, the cradle of the vine, was overwhelmed by nations of the faith of Islam, it was natural that a product, the enjoyment of which was forbidden to the conquerors, should no longer flourish. In all countries that came under Arab government—in

North Africa, Sicily, and Spain—the cultivation of the vine declined, for the ruling class in their Semitic temperance were more addicted to the worship of water and cooling shade than to that of heating drinks. Some fanatical princes would not even tolerate the existence of wine; for example, the Caliph Hakem II. of Spain, who caused almost all the vines in that country to be uprooted, leaving only about the third part of the vineyards standing for the sake of the ripe grapes, dried fruit in the shape of raisins, or syrup and grape-honey, the use of which was permitted to Mohammedans. What Islam could not quite accomplish in Spain—as the present sherry and Malaga wines prove—was completed in Morocco. The Atlantic coast of Morocco was anciently a very productive and celebrated wine district, into which the vine had been introduced, not by the Carthaginians, but by other Phœnicians long before. There lay the promontory of Ampelusia (vine-cape), now Cape Spartel, and the ancient town of Lix, whose Punic and Punico-Roman coins have the bunch of grapes for their distinctive mark, and of whose inhabitants it is related that they nourished themselves on the berries of wild vines. Strabo says that the vinestocks of Maurusia were so thick that two men could not span them, and they bore bunches of grapes three feet long. Other historians mention the large production of wine, and consequent export, in this district. The culture must still have been going on in the Middle Ages when the Arabs arrived, for the town they built on the site of ancient Lix was named El-Araish (vineyard). But now, in consequence of the Arab dominion, this extremely fruitful country possesses scarcely any or no vineyards, and only among the free Shelluhs of the Rif has Islam failed to eradicate the forbidden drink (note 30). Modern Greece—after so many fatalities, after centuries of ethnologic and economic degradation—produces, with few exceptions, very bad wine; the fame of her Chian, Lesbian, Thasian has long since evaporated, and the resinous *Resinato*—at which Liudprand grumbled so long ago as 968 on his ambassadorial journey to Constantinople—is not calculated to revive it. Perhaps *currants* are only a variety of grape produced by degeneration. They are said to have come from the Isle of Naxos, and to have been unknown in the Morea before

1600. It is remarkable that they wander, as it were, from place to place. They have disappeared from Naxos, exist no longer at Corinth whence they received their name, and are now only found in Patras, Zante, and Cephalonia.

In Italy the Ostrogoth and Longobardian princes and nobles, like all barbarians, certainly cared more for the quantity than the quality of their wine which the subjugated colonists were obliged to furnish. He who drinks out of his vanquished enemy's skull at a banquet will like best what is pungent and strong, and, above all things, will desire to empty and refill his warlike bowl as often as possible. The Normans in the south, the German kings on their march to Rome, and their accompanying dukes, earls, barons, and men-at-arms were all famous drinkers, but no fastidious connoisseurs. To this add the inalienable property in land, which kept the labouring classes ignorant and stupid, the everlasting and destructive invasions, and the insecurity and barbarism of life in general, which permitted no investment of capital for any length of time. Perhaps a few ecclesiastical proprietors made an exception, and the cellars of some venerable monasteries might now and then contain fine old wines; but we must not imagine that the taste of the bishops and abbots of the Holy Roman Empire was very refined, for they, like the knights, were also the children of a rude period. They not only drank wine without water—in contrast to the "human" custom of the ancients—but generally liked it best when boiled with spice, berries, and honey, *vinum moratum*, *claratum*—a sort of mixed drink or *claret*, that is sometimes mentioned by the ancients, but only as one of the secondary uses of the product that served for daily enjoyment.

Having regard to these unfavourable conditions, we may well suppose that all higher culture of the vine had declined after the Roman period. When we read Pliny's lengthy treatise on wine, or the passage on the same subject in the first book of Athenæus, we see clearly that the taste and wealth of the Roman nobles must have kept that branch of industry in constant activity. An infinite variety of wines was produced ("as the Libyan sands, or the waves of the sea," says Virgil), of which one kind was patronized

by this magnate, another by that. Eagerness to outdo one another led to ever new experiments, both in choosing the grape and in the treatment of the juice; fashions changed, but not more rapidly than the natural qualities of the plant. Thus, in the time of Augustus, the wines grown on the borders of Latium and Campania—made known to all the world by Horace under the names of Falernian, Massic, and Cæcuban—were considered the finest in the peninsula; but Pliny reports that in his time, two generations later, they were valued no longer, which, he adds, is a proof that every soil has its appointed time. He had said shortly before, that Falernian was no longer so good as formerly, because the producers thought more of quantity than quality. Manufacturers of wine in Greece and Italy are now reproached with exactly the same thing. Under the prevalent system of farming, based on the natural production, the quantity alone is looked at, and that mode of cultivation is preferred which promises the greatest yield; the vintage is carelessly gathered, ripe and unripe grapes mixed together, and, to produce the darkest possible colour, for which there is a general demand, the must is tapped too late, so that the vegetable slime and colouring matter contained in the skins of the grapes passes into the wine, causing the sour fermentation which commonly takes place in Italian wines before the end of the year. There is, besides, the high temperature prevailing during the process of fermentation in autumn, as well as the want of solid air-tight barrels and cool cellars. The temperature of the latter is seldom lower than the average temperature of the year. The mode of preservation common among the ancients was perhaps really more suitable to a warm climate than our barrels, with which the Romans first became acquainted through the Cis-Alpine Gauls and Alpine tribes, and which thence spread farther south (note 31). The Oriental wine-skins have at least the advantage of entirely excluding the air, and of shrinking as the wine is used, of being easily packed, and also of serving for a couch or seat during a journey.

It is universally admitted that in modern times the palm in the production of wine is due to Central and Southern *France*. Whilst Italy almost entirely consumes the thirty million hectolitres

of her yearly produce, and has therefore little to spare for export, France, on the contrary, till the vine-louse began its ravages, produced double the quantity at a money value of about 2,000 to 3,000 million francs, and became the chief exporting country, supplying all parts of the world with the finest wines as well as common table wines. The Department de l'Hérault alone furnished on the average from 12 to 15 million hectolitres—three or four times as much as the whole kingdom of Portugal. It is a remarkable fact that vines now produce the best wines in places close to the northern limit of their extension, where the plant was only gradually and with difficulty, and last of all, acclimatized; wines now famed over the world under the names of Burgundy, Johannisberg, etc. Here, of course, culture and technical skill have done their utmost; and who knows what they might not accomplish if adopted in the original homes of the vine? In this connexion, a fact that meets our eye in the first two or three centuries of the Middle Ages deserves serious attention. At that time, we find the Western world thought of the wines of Palestine as the *strongest and finest*, just as we now quote the ports and sherries of the Pyrenean peninsula; and this wine of the Phœnician-Philistine coast was greatly valued at the Byzantine court. It was the Arab invasion that put an end to its production and the commerce founded upon it.

In ancient times the vinestock was carried to all the countries surrounding the Mediterranean; has it now, we might ask, when civilization embraces the whole earth in an ever-increasing degree, spread over all parts of the world? The answer must be in the negative. In the southern hemisphere, with the slight exception of Cape Colony, the narrow belt of climate in which the vine will flourish is not to be found. In the so-called New World the attempts to cultivate it with profit have had no great success. North America produces perhaps one million hectolitres, and native Californian is to be had in most United States hotels, but it is described as having no agreeable flavour. Wine, we might say, loves not the west, and clings to the neighbourhood of its old home. In some parts of Australia there are said to exist tolerably extensive vineyards, mostly planted by Germans, but the Australian

Bordeaux is too heating, the Australian Moselle and Rhenish have no aroma—and so on.

At two points only, and quite at the end of the Middle Ages, has the hand of man really extended the region of the vine, namely, in Madeira and the Canaries—which may in a sense be said to belong still to Europe and the Mediterranean. Prince Henry the Voyager introduced shoots of the vine from the Peloponnesus and Crete into Madeira; and Alonzo de Lungo transplanted vines from Madeira to Teneriffe about the year 1507. The wine yielded there by Grecian grapes became celebrated all over the world; but lately the grape-fungus has destroyed this culture, and it is being revived with difficulty. But the cultivation of the vine in those islands is also interesting, because there it comes nearest to the climate of the tropics; the vineyards even of Southern Persia and of the Cape are further away from the equator than the Isle of Ferro at 27° 48′ latitude.

THE FIG-TREE.

(FICUS CARICA.)

IT IS natural that we should take the fig-tree, "the sister of the vine," as Hipponax already called it, for our next subject. The real fatherland of the fig-tree is Semitic Western Asia, Syria, and Palestine, where it grows the most luxuriantly, and bears the sweetest fruit. The Old Testament often mentions the tree, especially in connexion with the vine, and is full of figures and similes taken from it. To sit under one's own vine and fig-tree is equivalent to enjoying a peaceful and happy existence. In Lydia, wine and figs were so much considered the chief blessings of life that those who advised Crœsus not to march against Cyrus rested their arguments on the fact that the Persians drank not wine but water, and ate no figs. Phrygia was also famed for its abundant fig-trees. But *at the time and in the scenes* embraced by the Iliad, the fig-tree is not yet found on the western coasts and islands of Asia Minor, still less then could it have been known in the mainland of Greece. The first Greek mention of the fig-tree we find in the Odyssey, and there only in passages which are evident interpolations. In the book containing the description of Ulysses's descent into the nether world, which itself seems to consist of various pieces of different ages, figs, among other fruit, hang above the head of famishing Tantalus:

> "Above, beneath, around his hapless head,
> Trees of all kinds delicious fruitage spread;
> There figs, sky-dyed, a purple hue disclose,
> Green looks the olive, the pomegranate glows;
> There dangling pears exalting scents unfold,
> And yellow apples ripen into gold."

These verses are repeated in a fragment, awkwardly foisted into the really antique description of the palace of Alcinous, in order to bring in also the *garden* of the Phæacian king:

> "The reddening apple ripens here to gold,
> Here the blue fig with luscious juice o'erflows,
> With deeper red the full pomegranate glows,
> The branch here bends beneath the weighty pear,
> And verdant olives flourish through the year."

And finally, in the last scenes of the Odyssey, a late addition, we find Laertes designated the planter of fig-trees. Even Hesiod knows nothing of the fig-tree or its cultivation; but in the works of Archilochus (700 B.C.) we find it mentioned as the product of his native island Paros, in a verse that is probably not much younger than the last-quoted passage of the Odyssey. In later times Attica and Sicyon boasted of producing the finest figs; nay Demeter herself rewarded Phytalus, who had hospitably entertained her in Attica, by causing a fig-tree to sprout up from the earth. That this gift was felt to be the forerunner of a nobler and more cultivated life, is proved by the name given to a mass of dried figs presented at the Athenian feast of the Plynteria: a name signifying that the cultivation of the fig was the guide to purer manners (note 32). Wine and figs became necessaries of life in Greece, as common to the poor as to the rich. As the Arab is content with a handful of dates, so a few dried figs sufficed the Attic idler who spent his day staring about, and, according to the season, lying in the sun or in the shade. The epithet *philo-sukos* (lover of figs) applied to Plato might have been equally bestowed on all Athenians; and the story of the Persian king Xerxes shows how proud the Athenian was of his country's production. Xerxes, namely, caused Attic figs to be set before him whenever he dined, to remind him that the land where they grew was not yet his, and that instead of receiving the fruit as a tribute, he was obliged to buy it from abroad. The city of *Syko-phants* (lit., fig-informers) defended herself from Persian thraldom, but, as that nickname reminds us, she could not escape the decay of her political morality, and the ruin that ensued. Into Southern and Central Italy the fig-tree must have been introduced by the Greek colonists. It is found

interwoven with the legend of the origin of Rome, for Romulus and Remus are said to have been suckled by the she-wolf under the *Ficus ruminalis*—a feature of the legend that evidently owes its existence to the same symbolism that placed that showy and fertile tree in the Eden of the Hebrews (note 33). Under the Cæsars the varieties and names of fig-trees had become so numerous, that Pliny thought the formative law which keeps a species permanent was evidently changing. As late as the reign of Tiberius, the finest varieties of the fig-tree were still being transplanted to Italy direct from Syria. As it was then, so it is now; the fig, both fresh and dried, is the common and wholesome food of the Italian people, particularly in the south. Besides the kinds that bear fruit once a year, there is a variety that bears twice—in summer and in late autumn—the *Ficus bifera*. The ripe fruit must be eaten as soon as plucked, and cannot bear much handling. Cato used this fact as a striking argument before the Roman Senate, when he produced a fig from Carthage which was still perfectly fresh, saying, "So near to our walls is the enemy!" But we may reasonably imagine it had been plucked unripe, and that time and pressure had matured it. Smyrna figs, now considered the best, were also known in Italy in ancient times, being sent there pressed in boxes as they are now. The *Ficus duplex* of Horace may still be found in South Italy, where the mode of treatment can be learned from actual sight better than from the words of ancient authors. As is the case with all cultivated fruit-trees, there were, and are, many varieties of fig, but particularly two kinds—one dark purple, the other green, still called *neri* and *bianchi*, the black and the white. The latter being sweeter are chiefly used for drying, the former are eaten fresh. In hot countries the fig-tree, with its gigantic leaves pendent from its gnarled and many-jointed branches, affords a welcome shade in the Greece and Italy of to-day as in Palestine of old. The wild fig grows picturesquely out of the chinks of old walls, in ruins, and on rocks. Its wood, spongy and brittle while new (*inutile lignum*), is said. when properly dried, to become as hard and firm as oak.

THE OLIVE-TREE.

(OLEA EUROPÆA, L.)

LIKE the fig-tree, the olive is a native of the south part of Western Asia, and in this, its proper home, it was very early cultivated and improved by the Semitic races. In all parts of the Old Testament we find oil in common use for food, for sacrifice, for burning in lamps, and for anointing the head or body. Towards the interior of Asia the cultivation ceases, for the olive-tree loves the sea and limestone mountains. Egypt also produced no olive oil. The wild olive was frequent on the Greek coasts of Asia Minor, in the islands, and in Greece itself, and we find it often mentioned in the Homeric poems. Its evergreen foliage, the great age it attained, its indestructible vitality, and its hard wood, which admits of a high polish, attracted the notice of the people and of epic legend. Thus, in the Iliad, Pisander's axe has a long, well-polished handle of olive-wood:

> "An olive's cloudy grain the handle made."

The Cyclop's club is of the same material; so, in Theocritus and elsewhere, is the club of Hercules. Ulysses built his marriage-bed on the stump of an olive still firmly rooted in the ground:

> "Full in the court
> An olive spread its ever-verdant head.
> . . . . . .
> I lopp'd the branchy head; aloft in twain
> Severed the bole, and smoothed the shining grain;
> Then posts capacious of the frame I raise,
> And bore it regular from space to space;
> Athwart the frame, at equal distance, lie
> Thongs of tough hides that boast a purple dye."

The olive is evidently chosen for its stability, because it clings to the ground with far-spreading roots, and symbolizes the security of the marriage bond. A wild olive stands at the entrance of the cave where the Phæacians land the sleeping Ulysses, and is therefore called "sacred:"

> "High at the head a branchy olive grows,
> And crowns the perched cliffs with shady boughs.
> . . . . . .
> Now, seated in the olive's sacred shade,
> Confer the hero and the martial maid."

The *oleaster* (wild olive), with the branches of which the victors were crowned at Olympia, was said to have been brought to Elis from the extreme west by Hercules, a legend adopted by Pindar. In the market-place of Megara stood a very ancient wild olive, dating from the heroic ages. Thus the existence of the wild olive in Greece is vouched for by the oldest authorities and traditions; but it is very improbable that, in a climate somewhat rude, and amongst a nation still young and undeveloped (compared to the Semites), it was ever cultivated into an oil-bearing tree; far more likely its cultivation was introduced to the Greeks, with other valuable things, by neighbouring nations. The question is, how early? *Oil* is not unknown to the Homeric world, but evidently only as a foreign production, to be used by the rich and noble. When the heroes have washed or bathed, their bodies are anointed with oil in the Oriental fashion, and rendered sleek and supple. When Nausicaa goes to the sea-shore, she receives from her mother a flask of scented oil. The corpse of Patroclus is washed and anointed with oil; so are the manes of Achilles' horses, for they were sons of Zephyros, and immortal. In the treasure-house of Telemachus lay gold, bronze, wine, and scented oil. The salve used by the goddesses is especially costly and of rare virtue. Hera, when tempting Zeus, anoints herself with divine oil, which fills heaven and earth with its perfume. In Cyprus, the Graces anoint Aphrodite with immortal oil such as appertains to the gods. Penelope, in her grief, neither bathes nor anoints herself; but she sinks into a slumber, during which Athena purifies her face with the balm of immortal beauty used

by Cytherea when she joins in the dance of the Graces. The explanation of two other passages in Homer was a puzzle even to the ancients: in one, the garments of dancing youths are described as softly shining with oil; in the other, oil drips from the clothes of maids as they sit. Either the author merely compares the liquid lustre of the stuff to that of oil; or, according to a modern interpretation, the threads had been soaked in oil to make the fabric flexible or glossy, so that it still dripped with oil when the maids had it on!—a hypothesis that hardly needs refuting. As scented garments were common in the East and among the epic gods, at least of the later epics, one might suppose that the author meant some volatile oil with which the dress was slightly sprinkled; but there is no mention of *scent*, only of *shining*, and the analogy of the Greek word here employed points to the first opinion, already given by the ancient commentators. The white stone bench on which Nestor sits before the door of his house is also described as shining with fat, that is, glossy as if it were covered with fat. The jars used at the funeral of Patroclus doubtless contained honey and animal fat, two substances highly prized by primitive man, and therefore bestowed on the dead. When the river Titaresius is described in the Catalogue of Ships as rolling "his easy tides" into the Peneus, and yet not mixing with the latter stream, the author had no doubt observed the fact while bathing and anointing himself, that oil floats on the top of water. Taking all the passages together, they would seem to prove that oil was not a common native product, but a cosmetic introduced from the East, which gradually supplanted animal fats. It was used for anointing the body, but not for food or light. It is always very long before a northern people will reconcile itself to dressing its food with oil. As a German peasant relishes large pieces of fat bacon, but is rarely to be persuaded to pour oil over his vegetables or fry his meat in it, so the Gauls, as Posidonius tells us, refused to use oil in the kitchen. It must have been the same with the ancient Greeks. So much the less can we expect that the tree itself had been already really cultivated. Among the rural scenes depicted on the shield of Achilles, we find a black field with ploughmen on it, a harvest scene, a vineyard and a vintage, herds

of sheep and cattle, but no olive grove. We saw before that the olive-tree and its fruit are mentioned in the same passages of the Odyssey that speak of the fig-tree, but that these passages are late additions, and probably were not composed before the beginning of the Olympiads. This is not to be doubted of the end of the Odyssey, and as to the other two passages, which, taken together, are really only one, they show clear traces of later insertion. Even in them the olive-tree is only described as a garden-tree like the apple, pear, pomegranate, and fig, planted for the sake of its eatable fruit, and not as the object of cultivation for the production of oil. In one of the most original and glorious parts of the Odyssey, however, there is a verse, which, if the usual interpretation were correct, would oblige us to believe in the existence of cultivated olive-trees. Ulysses, thrown on the shores of Scheria, finds in the forest two trees growing together, and serving as a protection against sun and wind:

> "There grew two olives, closest of the grove,
> With roots entwined, and branches interwove;
> Alike their leaves, but not alike they smiled
> With sister-fruits; one fertile, one was wild."

The Greek words are: "The one a *phylia*, the other an *elaia*." Now if *phylia* meant the oleaster, the other can only be the fruit-bearing olive-tree. But *phylia* is one of those words by which the ancients themselves no longer knew what the poet meant. Ammonius says the mastich, others a degenerate olive with myrtle-like leaves; and Eustatius declares that many people used it in that sense down to his day. Pausanias mentions it as one of the species of unfruitful olive-trees. This later use of the name may very likely have originated in the very passage of Homer we have quoted. The word *phylia* by its derivation clearly gives a general and abstract meaning, that of *a plant*, particularly an evergreen plant, which is especially rich in vitality. If we must guess at some particular plant, the *myrtle*, which is not otherwise mentioned by Homer, would be the most probable in connection with a passage in Theophrastus, who says that some trees seem to love each other, and relates (quoting an older authority,

Androtion) that the myrtle and olive-tree used to intertwine their roots, and the myrtle branches to grow through the boughs of the olive, while other plants shunned the neighbourhood of the olive-tree. It is possible that this belief also was derived from Homer; but whatever plant may be supposed (for instance, the stone-lime, or some kind of *elæagnus*), the second tree mentioned in the passage, the *elaia*, is here, as elsewhere, the wild bushy oleaster, a plant of the woods, growing near the water far from the town, as the poet expressly says. It is not so easy to decide about another passage, in which the olive-tree is mentioned. Here it is related that Menelaus pierced Euphorbus, the son of Panthous, with his spear, and the wounded man fell to the ground like the sprout of a verdant olive-tree which a planter cultivates in a solitary, well-watered place; soft airs breathe on it from all sides; it bursts into white blossom; but suddenly a whirlwind dashes it to the ground. Here it is certainly possible to suppose that it was a slip of oleaster, intended some day to yield, not fruit indeed, but shade, timber, and green leaves; still the planting of a forest-tree is not very likely in the Homeric age so rich in woods. So, taking all together, we may say that, during the probably long period of which Homer's poems are the monument, we see the cultivation of the fig and olive at first unknown and foreign, then distantly announcing itself, and lastly, in later additions and a simile, coming forward bodily, and, as we might have expected, on the Ionian coasts and islands first of all. It was there also that the cultivation of oil flourished in the post-Homeric period. Æschylus calls the island of Samos "olive-planted," and an anecdote that Aristotle of Thales relates bears still older witness as to Miletus and Chios. Thales, it seems, on meteorological grounds surmised that an unusually rich olive-crop was to be expected; he therefore hired for the coming year all the olive-presses in Miletus and Chios, and as the harvest really turned out very abundant, he made a large profit by letting the presses; thus proving that even a philosopher can derive a practical benefit from his science. In the Isle of Delos, which is surrounded by the Ionian Cyclades, and where from early times Ionian pilgrims assembled to hold their yearly processions—

Latona, in giving birth to her divine Twins, had either clasped in her arms the Delian palm-tree, or held by an *olive-tree*, or leaned against both. The chorus in Euripides' "Iphigenia in Tauris" longs for the palm, the laurel, and the sacred olive of Delos. Strabo makes the goddess merely *rest* under an olive-tree after the birth of her children, by which turn of speech the conflicting forms of the myth were happily reconciled. The Ephesians afterwards declared that the birth at the foot of the olive-tree had not happened at Delos, but at Ephesus, and that the tree still existed, there being also a spring at Ephesus called "Under the Olives," which was mixed up with the legend of the foundation of that city. As the olive-tree is otherwise altogether foreign to the worship of Apollo (for the one dedicated to that god at Miletus is quite an exception), we may suppose that the olive in Delos, and the myth connected with it, were not native to that island, but owed their existence to the Athenians, and the rising worship of Pallas Athena; but in Rhodes, once an entirely Phœnician island, which afterwards belonged to the Dorians, the olive-tree must have existed in very ancient times. There the town of Lindos possessed a temple of Athena built by the Danaids, and containing offerings left by Cadmus, with an olive-grove that outrivalled the olive-trees of Attica. On the mainland of Greece, in the parts described by Hesiod, and therefore within the sphere of Æolian-Bœotian customs, there are still no traces of the cultivation of the olive. Among the later Greeks, Athens was considered the original seat of such culture; and there is a remarkable saying in Herodotus, that "at a time not long past there was not an olive-tree in the world except those at Athens." Accordingly, when the Epidaurians, on the failure of their crop, applied to the oracle at Delphi, they were advised to make statues of Damia and Auxesia from the wood of the tame olive; they therefore asked permission of the Athenians to cut down one of their olive-trees as being the most sacred, or because none existed elsewhere. The Athenians consented on condition that the Epidaurians should sacrifice every year to Athena Polias and to Erechtheus. At that time the Æginetes were still subject to Epidaurus; but after that they fell away from their mother city,

carried off the two images, and having neglected the promised sacrifices, incurred the enmity of Athens. Herodotus says nothing about the date of this event, but it probably took place about the middle of the sixth century B.C. Already at the commencement of that century Solon promulgated laws concerning the cultivation of the fig and olive, which must therefore have had some importance; although Pisistratus, Athena's protégé, is said to have first encouraged the planting of the useful olive in the hitherto bare and treeless country. In the Athenian Academy stood the sacred olive-trees (*moriæ*) dedicated to the goddess, which, unlike other sacred possessions, must have yielded a rich profit, for the numerous oil-vases given as prizes at the games instituted by Pisistratus were filled with oil from those trees. The trees in the Academy were from the stock of the mother olive in the citadel, which Athena herself had created and which, after being burnt by the Persians, sprouted up again spontaneously. From the Greek epithet applied to it, it must have been a mere groundling sucker. The fact that the Athenians distinguished by different names the wild from the cultivated olive proves that the cultivation of the *felix oliva* had taken firm hold in Attica. Pindar mentions it in one of his hymns, and Herodotus makes the oracle speak of the *tame* olive. The whitish limestone soil of the Attic peninsula, unfriendly to corn, was just the reverse for olives; and there, to quote the words of the chorus in "Œdipus at Colonus," the trees flourished "more than in the land of Asia or the great Dorian Isle of Pelops." But how came Pallas Athena to be patroness of the new culture, and why were oil and the cultivation of the olive so intimately and variously mixed up with the worship of the Goddess of Light who sprang from the head of Jupiter? Suidas says, because oil served for lighting, and the olive-tree fed the flame of the lamp; from which we perceive that the use of oil for burning came second in order of time, as its use for food came third. Homer is not yet aware of any connexion between the olive and the goddess, for the adjective *sacred* used once in the Odyssey cannot be taken as indicating such a connexion. But when oil formed the principal source of riches and the characteristic product of the Attic land, when the Athenians boasted that,

not long before, the cultivated olive was to be found only in their country, when they claimed all places where corn and olives grew as their property, they could not do otherwise than dedicate the pride and blessing of their country to that country's goddess, and look upon it as her gift.

It may be the fact that wild olives grew on the rock of the citadel, that one of them was grafted with a fruit-bearing olive from over the sea, and supplied other slips and cuttings, and that the root of the *vivax oliva* put forth fresh shoots after the burning of the city by the Persians; but the myth had no need of such realistic support. When at the end of the Persian war the old national hero, Theseus, and his deeds and adventures, reappeared in a transfigured light, he also was said to have broken off a branch of the sacred olive-tree before sailing for Crete, to have wrapped it in white wool, and uttering a prayer, to have laid it before Apollo's statue in the Delphinium. In Sicyon too, which, like Attica, had a soil favourable to the olive, and produced in abundance the "Sicyonian berry," the old fabulous king, Epopeus, had built a temple to Athena, and the goddess had shown her favour by causing a spring of oil to flow in front of the temple—thus directly bestowing on Epopeus the oil which the Athenians and their descendants only procured by dint of planting, plucking, and pressing the berries. In the first century of the Olympiads, when the coast-lands of the west—Italy, Sicily, Gaul—became the seat of innumerable and flourishing Greek colonies, a new and more extensive field was opened for the cultivation of the olive-tree, in which it flourished almost as well as under its native skies.

In the course of the seventh, and certainly the sixth century B.C., the beautiful hill and coast districts of the islands and of South Italy were gradually covered with evergreen and fruit-bearing groves of olives. Possibly, however, it was not Greek but Phœnician hands that sowed the first olive seed or planted the first cutting in the soil of the distant west. A myth related of Aristæus seems to contain a faint remembrance of such an occurrence. Aristæus, an ancient Arcadian, Thessalian, and Bœotian pastoral divinity, whom the first colonists had brought into Sicily, was believed by their descendants to be the inventor of the olive and

of oil. In this myth it is worthy of note, that Aristæus is not said, like Athena, to have *created* the olive-tree, but to have *invented* oil or the olive; that he taught the preparation of oil, to which belongs the use of the press; and that for this reason he was worshipped by the Sicilians during the olive harvest. But the same Aristæus, before ever he came to Sicily, had been ruler of Sardinia, which island was foreign to the Greeks; had there introduced agriculture and tree-culture—the island having till then been inhabited only by very many large birds—and had begotten two sons. From Sardinia he went to Sicily, civilized that island also, and among other rural arts invented the process of gaining oil from olives. Now, as Aristæus could not hold his ground against the new overpowering and dazzling worship of Apollo and Dionysus (though essentially kindred deities), but sank into the position of their son or tutor, he was evidently one with a Libyo-Phœnician god whom the Greek colonists had found in Sicily when they came there, and had adopted as their own. This god, a son of the nymph Cyrene, and the first planter of the silphion in Cyrenæa, could only have come to Sardinia from Africa; from Sardinia he goes to Sicily, and his plant or invention must have followed the same path. The myth says nothing about the time of this occurrence, and it must remain doubtful whether or not the Greeks found olive-groves in the vicinity of the Phœnician commercial settlements of which they took forcible possession. Afterwards, when oil had become an important article of commerce in the Grecian fatherland also, the two streams of civilization met in Sicily: the Carthaginian, and that modelled on the type of Attica, etc.

Turning to the mainland of Italy, we meet, at the first step, with a kind of chronological notice; a piece of good fortune that is very rare in the ancient history of culture. Pliny, quoting the annalist L. Fenestella, says that at the time of Tarquinius Priscus, in 616 B.C., not an olive-tree existed in all Italy. If this report be not a mere echo of the passage in Herodotus—and the addition of "nor in Spain and Africa," leads to such a suspicion—we may make a positive use of it to claim for the age of the Tarquins, an age of lively intercourse with the Greeks of Campania, the fame

of having brought the olive, together with other Greek arts, to Latium. Perhaps the report originated from a Cumanian document. At any rate, the Latin words *oliva* and *oleum*, which are derived from the Greek, prove that the tree was introduced by Greeks and no others; and many of the words relating to the kinds of olive and the preparation of the oil are also Greek terms very little altered in the Latin tongue. When the apex of the Flamen Dialis's hat consists of an olive branch bound up and fastened with wool, it results that this very old custom was nevertheless younger than the date of the arrival of the Greeks in Italy and their intercourse with the Latins. For what is the wool-bound olive branch but the εἰρεσιώνη borrowed from the Greeks? A reminiscence of this may be contained in the statement that Ascanius first instituted the *Virga lanata* at Alba; it was therefore neither Etruscan nor Sabine. Virgil indeed makes King Numa and the priest of Mars appear adorned with olive branches, but his poetic fancy has here evidently bestowed on heroes of the primitive age the later Grecian customs. In the triumphal processions of victorious generals, even the servants who had not been in the battle wore wreaths of olive, a Greek sign rather of peaceful than of warlike enterprise. At the ovations, which were an inferior kind of triumph, the crown of honour consisted of olive leaves. At the feast celebrated July 15th in honour of Castor and Pollux, crowns of olive were worn as ornaments; and the adoration paid to the said heroes originated in Magna Græcia. These facts are all signs of an acquaintance with the olive in the early days of the republic, but not a proof of its real cultivation. The latter must have spread from the various Greek centres to wherever the soil was favourable, first on the coasts and then in the interior, in proportion as the natural prejudice against the use of oil was overcome. Amphis, a comic poet who lived in the latter half of the fourth century, about the time of Philip and Alexander of Macedon, speaks in praise of the oil of Thurii, which stood on the site of ancient Sybaris. Thence and from Tarentum probably came the Calabrian and Sallentine olives mentioned by Cato; and the celebrated Licinian olive of Campania, and that from Mount Taburnus on the borders of Campania and Samnium,

will have been first introduced by the Campanian Greeks. The Sabine mountains were covered with olives, but the kind called *Sergia*, though a large tree, which endured the cold well and was rich in oil, lacked fineness — it had therefore undergone the changes observed in vines when transplanted to colder regions in the north. At the other side of the Apennines, where the splendid corn-fields commence, the climate, then as now, was unfavourable to the cultivation of the olive, but the tree still flourished in ancient Picenum, now the province of Ancona, which may be reckoned as belonging to South Italy. In the first century B.C. Italy was so rich in oil that it outrivalled all other countries in the quality and cheapness of the product.

Favoured by the soil and climate of Provence, the olive, like the vine, gradually spread from Massilia to the interior of Gaul, though not like the vine as far as the Marne and Moselle. The olive plantations on the Ligurian coast, which is still one immense luxuriant olive-grove, were no doubt of Massiliote origin. Where the mountains begin to rise at a short distance from the sea, the olive-tree was no longer found, so that the wreaths and branches worn or carried by the inhabitants when they went to meet Hannibal, cannot have been of olive, although the word used by Polybius has generally that meaning. In Strabo's time Genoa furnished these mountain-folk with oil, and received in exchange cattle, skins, and honey. On the other side of Italy, near the mouth of the Po, the low, marshy ground forbade the introduction of the olive, though the trade of this district with the Ionian islands, with Tarentum and afterwards Syracuse was both ancient and brisk. On the other hand, the opposite coast—that of Istria and Liburnia, with their sunny hills slanting towards the sea, and protected at the back by high mountains—was extremely favourable to the cultivation of the olive; and, indeed, the oil from the west coast of the peninsula of Istria was prized next to Italian oil, and rivalled that of Spanish Bætica. The oil exported from Aquileia to the Illyrians on the Danube in exchange for cattle, skins, and slaves, must have been that received from Istria; and it is an interesting fact that the Pannonians and Celts of the former region, in Strabo's time, were eager not only for wine, welcome to

all barbarians, but also for oil, though it may be only for burning in lamps. Even in the time of the Goths, after so many alarms and disturbances, that region had a superabundance of oil. Apicius, a celebrated gourmand of the time of Tiberius, and other authors, give instructions for artificially producing *Liburnian* oil, which must therefore have been still celebrated. Strabo says that the above-mentioned province of Bætica exported not only much, but the finest oil; and Bætican Corduba excelled or equalled the celebrated olive groves of Venafrum and Istria. It was natural that Spain, being a southern land, and possessing great variety of position and soil, should have adopted the new culture in proportion as foreign civilization took root, first on the coasts, then in the interior.

When the Roman Empire had reached its utmost extent, the cultivated olive had also spread from its starting-point at the south-eastern corner of the Mediterranean to all the countries in which it is now found, and throve in many parts of the south of Europe as if native there (note 34). According to popular belief (entertained also by the ancients) the European olive bears fruit only once in two years; but this is only true in so far that the tree, when exhausted by an extraordinary yield of fruit, cannot produce the same quantity the following year, unless assisted by the most favourable weather or extra culture. It is also not quite true that the olive, as Theophrastus believed, is never found farther from the sea than seven and a half geographical miles. This is only true in the sense that the tree loves the breath of the Mediterranean; but the expanse of the Lake of Garda, for example, is also sufficient for its well-being. Its proper sphere of propagation, however, coincides almost exactly with that of the oval formed by the coast-lands and bays of the Mediterranean. Beautiful, in a romantic sense, Minerva's tree cannot be said to be, but nothing so readily excites a sense of peaceful order and cultivation than the rows of trees in an olive plantation, with their whispering leaves and twisted trunks softly shading the slopes of the hills or the gently undulating plains; and, like Columella, we are fain to bestow upon the olive the epithet *prima omnium arborum*, "chief of all trees." It is not every-

where that the oil produced can equal that of Provence, Genoa, or Lucca. The oils from Calabria, Sicily, and Sardinia, are generally impure, and fit only to make soap, or be used in the manufacture of cloth. The reason lies in the faulty method of preparation, which, in its turn, is explained by the agrarian and economic conditions prevalent there. Particular care is needed in gathering the harvest; the fruit, as soon as ripe, should be plucked by hand, berry by berry, and put into the oil-press without loss of time; rapidity and cleanliness are all-important. But in most places there is a great want of capital, utensils, and hands. The naturally tender fruit is knocked off the trees with sticks, or, what is worse, is allowed to fall at its own time, over-ripe and half-rotten (the ancients already complained of both these practices). Then the fruit remains lying on the ground, and begins to ferment before an oil-press is at liberty. The latter is also generally so ill-constructed that it causes a waste of labour, and a considerable part of the oil is left in the press. Now as the common man prefers this evil-smelling produce to the best Provence table-oil on account of its stronger taste, he is naturally not inclined to take any extra trouble to produce better oil. But with all this, there is no denying the progress lately made. When once the condition of the farmers is improved by a healthier circulation of blood in the body politic, the cultivation of oil will be a source of riches to all the mountainous southern regions of the new kingdom. "There are two liquids," says Pliny, "that are agreeable to the human body: inwardly wine, outwardly oil; both coming from trees, but oil the more necessary."

Democritus of Abdera, the celebrated philosopher, who attained an age of more than a hundred years, when asked how a man could preserve his health and prolong his days, answered, "Use inwardly honey, outwardly oil." A similar reply was given by Pollio Romilius, who also lived a hundred years, when the Emperor Augustus asked him by what means he had remained so robust: "By wine and honey inside, and oil outside." Nowadays oil is no longer used as an external cosmetic, or only in the form of soap; but it is just the latter article, a northern invention unknown to the ancients, that has entirely superseded the Oriental-

Greek custom of anointing the body, which in Italy, indeed, was only usual among the upper classes. The anointing of Kings and Kaisers, and extreme unction, still remain as faint echoes of the old Roman time.

DOMICILIATION. TREE-CULTURE.

WHEREVER the cultivation of the three before-mentioned plants—the vine, the fig, and the olive—was prosecuted on a large scale, there the face of the country and the habits and manners of the people were of necessity changed. Tree-culture was one step more on the path to settled habitations; with and by it men first became permanently domiciled. The transition from a nomadic to a settled life has nowhere been sudden; it was always accomplished in many intermediate stages, at each one of which the nations often remained stationary for centuries. The wandering shepherd hastily sows a piece of ground, from which he as hastily gathers the ensuing harvest; next spring he chooses another and fresh piece, which is no sooner stripped of its spoils than he neglects it in turn. When a tribe has settled on some especially fertile spot, building fragile huts, there too the soil is exhausted in a few years; the tribe breaks up its quarters, loads its animals and waggons with its movable goods, and goes on to new ground. Even when such a settlement has become more permanent, the idea of individual right to the ground is not yet realized. The cultivated land, of which there is an abundance in comparison to the scanty population, is common property like the pastures, and is divided anew among the people every year. Such was the condition of the Germans in the time of Tacitus, and this is the plain meaning of that historian's words, which have been carefully explained in a contrary and more welcome sense by patriotic commentators. The communistic, half-nomadic form of civilization, which was closely connected with ancient patriarchal life, still prevails in many parts of Russia, among the Tartars, Bedouins, and other races. During this first stage of agriculture, cattle-

breeding is still the principal occupation, milk and flesh are the staple food, roving and plunder the ruling passion. The huts or houses are lightly built of wood, and easily take fire; the plough is nothing but a pointed branch guided by slaves taken in war, and only slightly scratches the ground; the foresight of the community is very short, extending only from spring to autumn. The sowing of seed in winter is a considerable advance, but the decisive step is taken when the Culture of Trees commences. Then only arises the feeling of a settled home and the idea of property. For a tree requires nursing and watering for many years before it will bear fruit, after which it yields a harvest every year, while the covenant with the annual "grass" which Demeter taught men to sow is at an end the moment the grain is gathered. A hedge, the sign of complete possession, is raised to protect the vineyard or the orchard; for the mere husbandman a boundary stone had been sufficient. The sown field must wait for dew and rain, but the tree-planter teaches the mountain rivulet to wind round his orchards, and in so doing gets involved in questions of law and property with his neighbours—questions that can only be solved by a fixed political organization. One of the oldest political documents with which we are acquainted, the treaty sworn to by the Delphic Amphictyons, contains a decree that "running water shall not be cut off from any of the allied cities either in peace or in war."

A house surrounded by fruit trees is intended, like them, to last for many years; it is therefore built of stone, and internally decorated with hereditary property, and the acquisitions of progressive civilization. Iron is found, and gradually becomes a more and more frequent, and at last the principal, material for all implements. The gods themselves become nobler: the shepherd, who is accustomed to slaughter animals, and whose poetry revels in pictures of frightful gashes given with the stone-axe, will offer to his deities raw and bleeding victims; the husbandman sacrifices to Ceres and Terminus with gentler offerings of bruised spelt and salt, garlands and cakes; but wine first attuned the hardy peasant to mildness and mirth, and made him delight in dramatic games; while it was the olive, the tree of Minerva,

goddess of intellectual light, that first furnished a symbol for peace and prayer and kindness.

The ancient epic poets already distinguish carefully between the three methods of utilizing the ground—*cattle-breeding*, or flesh, milk, and wool; *agriculture*, or the sweet fruit of the halm, the nourisher of mankind; and lastly, *tree-planting*, or wine and oil. For the last two stages (of which the third becomes the more limited to the vine the older the passage is), the technical expressions, *aroo*, I ear or till, *aroura*, ear-th, or til-th, are contrasted with *phyteus*, I plant, *phytalia*, plantation. Diomed says that his father dwelt in a rich house, and possessed many fertile *fields*, *orchards*, and *herds*:

> "There, rich in fortune's gifts, his acres till'd,
> Beheld his vines their liquid harvest yield,
> And numerous flocks that whitened all the field."—ILIAD.

Sarpedon says to Glaucus:

> "Why boast we, Glaucus, our extended reign,
> Where Xanthus' streams enrich the Lycian plain,
> Our numerous herds that range the fruitful field,
> And hills where vines their purple harvest yield?"

Achilles asks Æneas:

> "Has Troy proposed some spacious tract of land
> An ample forest, or a fair domain
> Of hill for vines and arable for grain?"

—namely, as the prize for killing him. The Ætolians offer Meleager, if he will take part in the fight:

> "Full fifty acres of the richest ground,
> Half pasture green, and half with vineyards crowned."

In another Homeric passage, there is added to the description of corn-fields, gardens, and pastures, in a remarkable manner, the fishing on the sea:

> "In wavy gold thy summer vales are dressed,
> Thy autumns bend with copious fruit oppressed;
> With flocks and herds each grassy plain is stored,
> And fish of every kind thy seas afford."—ODYSSEY.

Later prose writers also mention the corn-field and plantation

together as the two integral parts of agriculture. In Xenophon's "Œconomicus," Socrates converses with Ischomachus about agriculture, and asks whether plantations may be considered a part of it. "Certainly," replies Ischomachus; and the dialogue goes on to discuss the depth and width of ditches, irrigation, choice of ground, etc., with exclusive reference to the vine, olive, and fig-tree. As Demeter (Ceres) is the goddess of the fruits of the field, so the half-Oriental Dionysus (Bacchus) is especially the personification of the fruit of trees, and the blessings derived from it; though an inscription at Selinus seems to make Demeter also a guardian of the orchard.

It was the same in Italy. There also corn-field and plantation were co-ordinated branches of culture. Dionysius of Halicarnassus praises Italy as excluding no kind of culture; here it is treeless, because it produces corn; there poor in grain, because planted with trees, etc. Appian tells us that when the Romans were conquering Italy, they offered the waste land to all who would cultivate it, "requiring only as yearly rent a tenth of the produce of sown land, and a fifth of that of planted land." The combination of purely arable cultivation with the planting of vines and fruit-trees appeared so natural to Cn. Tremellius Scrofa, an inhabitant of South Italy, and contemporary of Varro, that he remarks the absence of the last kind of culture in Transalpine Gaul and the Rhine districts, as well as the custom of manuring with marl, and the use of ashes instead of salt.

It is interesting that the sacred books of the Zends also mention the same threefold utilization of the ground. In the "Vendîdâd" the question is asked: "What is the third thing that is most agreeable to this earth?" And Ahura-mazda replies: "The place, O holy Zarathustra, where cultivation produces most corn, hay, and fruit-bearing trees." "Fourthly, Who is the fourth that fills this earth with the greatest contentment?" Ahura-mazda answers: "He who cultivates most corn, grass, and trees that afford nourishment, O holy Zarathustra."

Herodotus relates that Mardonius the Persian, when persuading Xerxes to march against the Athenians, praised Europe as a beautiful country where the soil was very fertile, and all kinds of

fruit-trees grew. On the other hand, Herodotus describes Babylonia as rich in corn, but utterly devoid of fruit-trees.

In the Old Testament and in the Greek epics we find orchards described as being surrounded with ditches, hedges, or walls, while the sown field was open. Like the vineyard in the parable, Isaiah v.: "My well-beloved hath a vineyard in a very fruitful hill; and he fenced it, and gathered the stones thereof, and planted it with the choicest vine;" so the vineyard figured on the shield of Achilles was also surrounded with a hedge and ditch. Oineus, the ruler of Kalydon, killed his own son Toxeus (archer) because he had dared to leap the ditch that surrounded the vines. The material used for fencing is rather dubiously described by an etymologically obscure name, *αἰμασία*—either thorns or stones, or even both together, according to the character of the district. At least we read in the Odyssey that the god-like swineherd fenced his court with stones, and planted thorns upon them:

> "The wall was stone from neighbouring quarries borne,
> Encircled with a fence of native thorn;"

for "encircled" read "surmounted." Such enclosed orchards and vineyards are still to be found all over South Italy, the lanes winding between walls and hedges of prickly bushes that hide the view from the dusty traveller. And in that part of the world, even now, a piece of ground that is walled or hedged in is universally considered more valuable than an open one.

In Homer's time, it is weak persons, especially old men, that are entrusted with the care of trees, and who, bent to the earth, plant, dig, and prune. Fighting, ploughing, and mowing was the work of lusty youths and men. This is clearly seen in a passage in the Odyssey; Eurymachus, one of the suitors, laughs at Ulysses' bald head, and proposes to hire him:

> "To tend the rural trade,
> To dress the walk, and form the embowering shade."

To which Ulysses angrily replies:

> "Should we, O prince, engage
> In rival tasks beneath the burning rage

Of summer suns; were both constrained to wield
Foodless the scythe along the burdened field;
Or should we labour while the ploughshare wounds,
With steers of equal strength, th' allotted grounds:
Beneath my labours how thy wondering eyes
Might see the sable field at once arise!
Should Jove dire war unloose, with spear and shield
And nodding helm, I tread the ensanguined field,
Fierce in the van: then wouldst thou, wouldst thou—say—
Misname me glutton on that glorious day?"

So too Laertes, full of years, has retired to the gardens, where his companion is the aged slave Dolios, whom Penelope had brought from her father's house to that of her husband. The implement used was either the one-bladed spade mentioned in the Iliad, or the two-pronged rake named in contrast with the plough in a fragment of Æschylus, with other tools of the same kind.

When men began to cultivate trees, wars became more disastrous, there being more objects to destroy. According to the earliest custom—not wanting notice in Homer, and still existing among the Bedouins—it was a common privilege of war and punishment of the enemy to drive away the herds or steal the horses. Frequently the owners pursued the retreating robbers, and recovered their property; at the worst, the lost cattle were soon replaced by new. The Germans retreated into their forests and swamps, and the Romans were unable to harass them. "Why should we risk a pitched battle with you?" said Idanthyrsus, king of the Scythians, to Darius; "we have no cities to be taken and no plantations to be rooted up." In our own era, in 1812, the Russians acted in a similar manner; they even burnt their own capital which consisted mostly of wooden houses, retreated farther and farther into the inhospitable interior, leaving their defence to distance, climate, and the wilderness. It is very different where men dwell in substantial houses surrounded by vines, olives, and fig-trees; there a cruel foe can cause a desolation that will endure for a generation to come. The water-courses are destroyed, and thereby the chief spring of life cut off; it costs more time and money to restore them than can be obtained after a disastrous war. The olive-trees are cut down, and grow again

but slowly; the vine requires many years before it can bear fruit. The Mosaic law indeed forbade the destruction of fruit-trees; Deuteronomy xx. 19: "When thou shalt besiege a city a long time, in making war against it to take it, thou shalt not destroy the trees thereof by forcing an axe against them; for thou mayest eat of them, and thou shalt not cut them down:" but the Old Testament itself is a proof that this law was never observed in the fury of the fight. For example, the national hero of the Hebrews, Samson, not only burnt the corn in the enemy's country (which would grow again next year), but also the vines and olives, not so easy to replace. When Alyattes, King of Lydia, was unable to take Miletus, he wasted the district every year, destroying trees and corn. In later times the East was repeatedly desolated by invading hordes and has never recovered its former prosperity. The history of the Greeks is full of similar barbarisms—both before and after Plato, who would not suffer them in his "Republic," at least between Greeks. How often, while reading Thucydides, do we not meet with the significant words, "They wasted Attica, both the districts where the vegetation had been before destroyed and had sprouted anew, and those which had been spared by former invasions"! A passage in a speech by Lysias clearly proves how the Peloponnesians treated the olive-groves of Attica: "Ye know that at that time many regions were covered with olive-trees, most of which are now destroyed; and the country has since then become barren." During the first Messenian war the trees were spared, but only because the Lacedæmonians regarded the country as their own; afterwards they wasted it all the more. During their wars with the Eleans, as Herodotus relates, "When the army had marched into the enemy's country and had already begun to cut down the trees, an earthquake happened;" and farther on, "he marched against the city, devastating and burning the land." In modern Greek wars of liberation, the common method of punishing the enemy was to cut down and uproot; and the mediæval chronicles of Southern Italy too frequently mention the same manner of treating an enemy's country. Barbarossa decreed that those who destroyed vineyards or orchards should be punished like incendiaries. On the other hand, a rebel and evil-doer not

only forfeited his life, but his house was pulled down, his fruit-trees felled, and his vines uprooted (note 35).

The French in Algiers have had an opportunity of learning how different half agriculture is from full agriculture; or agriculture joined to nomadic customs from agriculture which includes tree-culture. To get at the swift Arabs, the European columns were obliged to rival them in rapidity and cunning, for if a rumour of the approach of the enemy had reached a village only two hours before his arrival, nothing was to be found in the place where it was hoped that the Arabs might be overtaken but the still warm ashes of their camp-fires. The tribe had retreated farther into the interior, and when pursued went on retreating till they gained the inaccessible desert. Their crops were mown down by the French, their herds, when found, were driven away, and then sometimes the tribe would humbly submit; but the same scene was probably repeated the following year. Very differently did the Kabyles of the Djurdjur mountains behave when invaded. These direct descendants of the ancient Libyans are a horticultural people, with houses partly made of stone, possessing strictly divided freeholds, marked off by hedges and walls over which hang boughs full of fruit, and with a strong sense of attachment to the place of their birth. They live among the mountains where it is difficult to reach them; but when this is once accomplished, a small fortress with a scanty garrison is sufficient to hold them in check. They pay tribute regularly, and are content if left undisturbed to practise their own customs and communal government. A few roads are made through their mountains, the unaccustomed safety they enjoy encourages them to visit the markets and exchange their wares; and imperceptibly, but surely, European civilization penetrates among the hitherto seclusive and suspicious race. The density of a population is also in exact proportion to its more or less complete conversion from a nomadic life. A Bedouin family requires for its support a large space, of which it only partially makes use; the Kabyles cultivate the soil and elicit from it a ten-fold produce; in the one case square miles are indispensable, in the other a garden a few feet square is quite sufficient.

ASSES, MULES, GOATS.

CONTEMPORANEOUS with the adoption of the novel culture, because closely connected with it, were the introduction of the *Ass*, the breeding of *Mules*, and the propagation of the *Goat*.

The patient, hardworking, and intelligent *Ass*, which obediently fulfilled many domestic duties—driving the mill and the draw-well; carrying baskets full of earth to the hills; and accompanying its master to market and feast, loaded with the produce of the soil—had no need of fat meadows, shady trees, and ample space like the ox; it was content with what came first, the way-side herb, the refuse of the table, with straw, twigs, thistles, and brambles. That the ass came to Greece from Semitic Asia Minor and Syria—though its original home may have been Africa, where its relations still live—is taught us by the history of language (note 36), and confirmed by the oldest known conditions of nations and culture. In the epic time, when cattle-breeding and agriculture were the chief occupations, the ass had not yet become a common domestic animal; it is only mentioned *once* in the Iliad, and that only in a simile invented and inserted by a poet who was prejudiced against the Salaminians and Athenians; the simile is paradoxical and awkwardly paired with the one preceding. In the Odyssey, the second part of which afforded plenty of opportunity for noticing such an animal, the ass is never named at all; nor is it spoken of by Hesiod. As the Latin word *asinus* has an archaic form which seems to reach back to a period preceding the Greek colonization, the animal must have come into Italy overland through the Illyrian tribes; or must we suppose that the people of Cumæ, when they founded their first city on the present Isle of Ischia, still said *asnos?* Later on, in Italy the ass, besides being valued for the

domestic duties he performed, was of great use in facilitating import and export in the mountainous parts of the peninsula. Oil and wine and even corn were carried on donkey-back from the interior to the sea; Varro tells us that merchants kept herds of asses expressly for that purpose. The ass, and with it its name, accompanied the progress of the culture of the vine and olive to the north, not crossing the limits of that culture. In proportion as the ure-ox, the bison, and the elk died out, the long-eared foreign beast become domesticated in Gaul, receiving various names, and living in the customs, jokes, proverbs, and fables of the people. Germany, however, proved too cold for the animal.

The *Mule*, already frequently mentioned by Homer, came from Pontic Asia Minor, or, as Homer expressly says, from the Henetians, a Paphlagonian people:

> "Where rich Henetia breeds her savage mules;"—ILIAD.

on which the Scholiast remarks, "The crossing of the ass with the horse was first invented by the Henetians." In another passage it is the Mysians who bring mules to Priam:

> "Last to the yoke the well-matched mules they bring
> (The gift of Mysia to the Trojan king)."

The Mysians and Paphlagonians were neighbours, and the way to the latter led through the country of the former. In a fragment by Anacreon the Mysians are directly named as the inventors of mule-breeding. The mention in the Old Testament of Togarmah —that is, Armenia or Cappadocia—as the place whence the best mules came agrees with the above (Ezekiel xxvii. 14); the law forbade the Israelites themselves to breed mules. Still later we hear of Cappadocian and Galatian mules, it being reported of the first that they had the power of reproduction; they must therefore have enjoyed especially favourable natural conditions.

Very remarkable, because analogous to the religious ideas of the Israelites (perhaps also to those of other Semitic and half-Semitic races), is the old prohibition ascribed to the mythic period against breeding mules in the land of the Eleans. King Œnomaus, son of Neptune and father of Hippodameia, is said to

have pronounced a curse against such breeding, and from that time the Eleans took their mares out of the country to be put to asses. Perhaps this Elean custom was only a pious survival from those early times, when the only mules in Greece were introduced from the East, and national feeling was against the unnatural mixture. In the Odyssey we are told that Naëmon of Ithaca possessed twelve mares in fertile Elis with their mule foals:

> "For Elis I should sail with utmost speed,
> T'import twelve mares which there luxurious feed,
> And twelve young mules, a strong laborious race,
> New to the plough, unpractised in the trace."

The mule, as represented in the epics, is already a hard-working animal, used for field-labour, harnessed to the waggon, or carrying loads, and it is frequently described as patient and laborious. A well-known verse of Theognis says that the mule was preferred to the ass as being the stronger animal. The abstract Greek appellations *hemi-onos* (half-ass), and *oreus*, *oureus* (mountain-animal, found in Hesiod and throughout antiquity in this double form), are striking. The last name is explained by the Iliad, where the mule is described as bearing heavy loads of wood from the mountains to the plains (Books xvii. and xxiii).

The *mulus*, or mule, was brought to Italy, as the name proves, from Greece (note 37). The Latin name was afterwards used by all the nations which adopted the animal. In Varro's time, just as now, carts were drawn along the high-roads by mules, which were not only strong, but pleased the eye by their handsome appearance. The Greeks were equally delighted with the animal, and Nausicaa's car is drawn to the sea-shore and back by mules.

The *Goat* was used as a domestic animal in the mountainous districts of the south, where cultivation more resembled that of gardens than of fields. It feeds on the spicy herbs that grow on sun-heated cliffs, is content with tough shrubs, and yields aromatic milk. Stony Attica, which was rich in figs and olives, also nourished innumerable goats; and one of the four old Attic phylæ was named after the goat. Even if the animal came into Europe with the first Aryan immigrants, and accordingly the

Hellenes and Italians had not to make its acquaintance after reaching their new home, yet it was only there, and under the Semitic mode of cultivation there adopted, that it found its proper place and true use (note 38).

It is obvious, too, that the keeping of *Bees* could only have been adopted after the rise of tree-culture. The man who planted his own olives, for the fruit of which he had to wait for years, could easily keep beehives within his enclosed ground, nursing the bees through the winter, increasing their number by colonies derived from the parent-stock, and in due season receiving the reward of his exertions in the shape of honey and wax. Aristæus, the inventor of oil, also invented apiculture, and Autuchos, *i.e.*, the self-possessing, is named as his brother. Homer knows nothing of bee hives; the simile of the Achæans gathering together "like bees flying out of a cleft in the rock," is derived from the swarming of *wild* bees. We first meet with an artificial beehive in a not very old passage in Hesiod's Theogony; in it the working-bees are distinguished from the drones, which latter are compared to *women!* In those days the shepherd robbed the wild honey-combs which he found in the forest, and if the spoil was abundant he made *mead* of the honey; the husbandman fermented his flour into a kind of raw *beer;* the vintner often mixed the honey from his hives with his wine, which he then called *mulsum*, and believed that the enjoyment of this beverage would lengthen his days (note 39).

STONE ARCHITECTURE.

It has already been hinted in the previous pages, that with the increased stability of life resulting from the invention of horticulture, the *dwellings* of men also acquired a more enduring character. In fact, it was from the south-eastern corner of the Mediterranean coast, that stone architecture first gradually spread, like wine and oil, to all the coasts and peninsulas of Southern Europe, and thence to the whole civilized world. In very early times the Phœnicians had taught the art of building walls and terraces to the Greeks; the Greeks imparted this knowledge to the Etruscans and Latins; and from Italy, at a very late period, it spread to the nations north of the Alps.

When the Indo-Europeans from the Sea of Aral and the Caspian Sea (with the then shape of which we are not acquainted) wandered westwards with their herds, what they came to was either immeasurable steppe or continuous and endless forest. In the former, so favourable for roving, there were no materials to be found for building houses; so the Scythians and Sarmatians lived in their waggons covered with basket-work. These waggons were very large, being often supported not on four, but on six wheels. Hippocrates writes: "They are called Nomads because they have no houses, but live in waggons; the smallest of which have four wheels, but the others six;" so that the houses on wheels mentioned by Pindar might be called movable houses. And in fact, Hippocrates continues: "These waggons are roofed with felt; they are built *like houses*, some twofold, some threefold; they protect their occupants from rain, wind, and snow, and are drawn sometimes by two, sometimes by three oxen." The women lived in the waggons, the men rode. The Slavs, who were

the northern neighbours of the Sarmatians, adopted many of their customs, but they were not a riding or driving nation; they were robbers roaming through the forests, but yet they built houses. What this oldest Slavo-Germano-Celtic house was like, we learn even now from the similar dwellings of roving nations on the borders of Europe and Asia; for example, the Turkomans. The framework and roof consist of poles, and the two united form a kind of cylinder, rounded at the top. The whole is covered with felt, and the rectangular opening which serves for a door is also curtained with felt. In the sculptures on the column of Antoninus this kind of house is represented in a probably improved form, and it is so described by Greeks and Romans, whose reports are not contradicted by the early Middle Ages. In the sculptures above-mentioned the fortifications of the Marcomanni and Quadi, stormed by Marcus Aurelius, are distinctly seen to consist of wicker-work bound by crossed and twisted ropes; the dwellings are circular with rounded roofs, no windows, and square doors; they seem to be interwoven with rushes or canes and bound with ropes. The houses of the Celts are similarly described by Strabo, and those of the remote Caledonians and Mæotians were still constructed in this way in the time of Jornandes, when their kinsmen on the continent had long adopted the Roman fashion. The Slavs too are described by Procopius as dwelling in such huts of wicker-work, which they could easily forsake, and build others in another place. "The Suevi," says Strabo, "and the neighbouring nations live in huts built only to last a day." Seneca describes the houses and customs of the Germans and nations on the Danube in the same way. Tacitus afterwards reports that the Germans were ignorant of the use of mortar and bricks. The huts above described had no foundations, and a thief could enter them at night by digging a passage under ground. The roof rested simply on the walls, and there was no interior division, for the Alemannian law declared that a new-born child had lived when it had opened its eyes and seen the roof and the four walls; such a house must have been no longer round but square, like the Dacian houses on Trajan's column, which besides have a window above the

door. How slight the whole structure was, is proved by a law punishing any one who *scatters to pieces* another's house. It is natural that such houses were constantly exposed to fire: the enemy threw firebrands on the roof of rushes; the robber secretly set fire to the wood-work; an accidental flame rapidly consumed the slender pillars and the dry osiers that bound them together. The very hearth in the centre of the house, which sent its smoke up to the roof and dried the wood-work, and the common northern custom of lighting up the house in the long winter evenings by means of a torch stuck in a crevice, must often have been the cause of destruction. Not seldom may the occupants sleeping on the ground have perished in the smoke and flame; but, if they escaped with their lives, a new house was speedily built, impervious at first to the rain, unstained with soot, and happily free of the vermin that had infested the old habitation. The foremost in the great Indo-European march, the Celts, had on moving towards the West come upon the Iberians, who, if conjecture be right, were the outermost link of a great chain of nations, reaching from the valley of the Nile and the north coast of Africa, through modern Spain, to the Channel and the Atlantic Ocean. Did the impulse to erect the stone monuments which we find under different forms and names (*nuragen*, *dolmen*, *cromlech*, etc.) in Algiers as well as in Sardinia, Western France, and the British Isles, belong to this race? and had the Celts, in their later erections, only inherited the custom from their predecessors? Was it the same impulse, arrested in the north-west at its rudest stage, that prompted the building of the temples of Egypt, and rose almost into the sphere of beauty and true art? In consequence of their geographical position, the Celts very early came in contact with Phœnician, Grecian, and Roman civilization; they learnt to sink a stone foundation into the ground, to hew stones, fit them and cement them with mortar, and thus settle permanently on their native soil. The Germans learnt the art much later; the Slavs of the East have scarcely learnt it to this day. Purely agricultural nations were still quite content with wooden houses, wicker barns (Lith. *klẽtis*, and Old Slavic *klẽtĭ*, outhouse, storeroom; Gothic *hleithra*, tent, arbour; while the Old Celtic

clêtâ, Irish *cliath*, Cymric *cluit*, still retain the original meaning of wicker-work, hurdle; French *claie*, etc.), and with mere hurdles for their horses and cattle. When the Vineyard came, and not till then, appeared the *murus* (Old Irish *múr*) that enclosed it, the stone-paved *street* (*via strata*) that led past it, and soon connected with one another the stone hamlets (*villas*), markets (*mercatus*), wells (*puteos*), convents, churches, and erelong the cities. If we could doubt that real architecture originated in the countries around the Mediterranean, and slowly advanced from south to north, and from west to east, the history of the commonest words would prove it to be the fact. Our word chalk was derived from the Latin *calx*, which in turn was derived from the Greek. Our tile and mortar are from the Latin *tegula*, *mortarium*; our tower from *turris*; our fenster (window) and söller (attic), from the *fenestra* and *solarium*; our post and pillar from *postis* and *pilarium*; our chimney from *caminata*, and so on (note 40). When the Slavs migrated into the regions of the Oder and Danube, they cannot have been acquainted with any masonry, for all their expressions for such work are derived partly from Byzantium, partly from Germany, and a few from the Turkish language—as the science of philology proves. Bohemian Prague on the Moldau is a city of splendid houses, for it lies close to the European West, and was built with its assistance. Russian Moscow was, and partly is, a mere wooden camp, like the Budine settlements described by Herodotus; and if the popular songs bestowed the epithet "white-stoned" on their imperial residence, on account of the few stone edifices it contained (which were built by Italians fetched for the purpose), it only proves that such another wonder was not to be found in their sphere of experience. When the Roman-German West had once mastered the southern mode of building, it reared its towers and spires in longing aspiration to the skies, almost to the height of the Egyptian pyramids—this, however, was a morbid barbaric impulse, from which the balanced nature of the Greek had preserved him. The terraced horizontal architecture of the Mediterranean city, rising on all sides up to a castle-crowned hill, or amphitheatrically surrounding some beautiful bay, is hardly met

with beyond the district of the olive; from that point to the north begins the pointed Gothic architecture of the mystic-minded masters of the architectural guilds. We do not know exactly how high were the Babylonian-Assyrian terraces of brick; what is still left standing is about as lofty as the tallest trees, the sequoia of California, and the eucalyptus of Australia—from four to five hundred feet: thus far it is possible for organic life and the art of man to raise themselves above this planet. As once the Hamitic-Semitic *stone* supplanted the primitive material, *wood;* so this in its turn, is being supplanted, in our new technical and mechanical civilization, by *glass* and *iron*—glass, an almost incorporeal thing; and iron, found late and only intended for implements—the materials of a demonic and magic art that would have seemed to the ancients incomprehensible as an edifice of vapour, or else an illusion of the senses, like the pearly bridge of Iris.

BEER.

When the Roman Empire was complete, its limits closely corresponded with those of the vine and olive. Where in the north the climate was too cold, or in the south too hot for the vine, or where olive oil was no longer an article of daily consumption, there also the Roman no longer ruled, or only temporarily; and there ended the world of the ancients. Even modern Europe may be fairly divided into a *wine-and-oil* land and a *beer-and-butter* land: the region of the first is that part of Europe which leans towards the Mediterranean Sea; the region of the last the part that slants towards the North Sea and Baltic. In the most ancient times it was far otherwise. On collecting the passages relating to the history of beer and butter scattered through the writings of the Greeks and Romans, we are astonished at the extent of the sphere in which both these articles, now considered as especially belonging to the north, were found; and at the fact that whole countries and nations have abandoned their use. The gift of Bacchus supplanted the old native turbid drink boiled out of grain, and Minerva's boon banished the fat that shepherds had churned out of the milk of sheep, cows, and mares. It was like the victory of a new religion and foreign manners over old barbaric ways, the attachment to which was very slowly lost, first among the chiefs and nobles, and at last among the mass of the people. We are informed by Herodotus and others that the Egyptians—that primitive pre-Semitic race, which perhaps had developed a peculiar civilization ages before the Indo-Europeans invaded Europe—used a drink made out of barley. In the poems of Æschylus, a King of Argos cries to the Danaids, who had come from Egypt, that here they will find a manly population and not drinkers of barley-wine. In places where the soil would not permit the production of wine, the god Osiris himself had taught the people to make a drink of

barley, almost equal to wine in pleasantness and strength. "The Egyptians," says the Academician Dio, "who are a people much inclined to drink, have invented a substitute for wine for those too poor to buy it; namely, wine made from barley: when this is drunk, it makes men merry; they sing and dance, and behave exactly as if full of sweet wine." And in Strabo's time, the citizens of Alexandria—a place only existing since the Macedonian period with a very mixed population—generally drank the same old Egyptian beverage.

Theophrastus is the first to mention its name, and under this name *zythos*, Latin *zythum*, the drink is often alluded to by Greek and Latin authors. We can quite understand that the Egyptians would try to vary the taste of the sweet slimy beverage by the addition of pungent substances, and the fact is proved by a passage in Columella, which speaks of the bitter lupine. Strabo says even of the more distant Ethiopians that they lived on millet and barley, and prepared a drink out of those products. The English travellers who have lately penetrated to the sources of the Nile, found a kind of raw intoxicating beer in use among the half-negro tribes, who drink it out of gourds. Among the pre-Indo-European Iberian race in Spain, which was genealogically or historically connected with the Libyans in Africa, beer was drunk in the earliest times. Pliny calls Spain an "excellent beer-land," where the people knew how to keep and improve it. The customs attributed by Strabo to the Iberian tribes living near the Atlantic coast are so singular and wild, that when the same author says the Lusitanians drank beer, we must suppose that this was an ancient Lusitanian habit, and not derived from the Celts. "But wine," adds Strabo, "is very rare among them," from which we infer that at that early time the vine was at least beginning to be cultivated in the land where now it rules alone. Polybius mentions a characteristic trait of attachment to the national drink in a half-Grecianized, and so half-civilized, Iberian king. His palace is in all respects a copy of that of the Phæacian king in Homer—and even that was barbaric—with one exception; in the centre of the building stand gold and silver vessels filled with barley-juice. It makes a similar impression when we read of the

heroic Numantians, that when on the point of engaging in battle, they feasted on half-raw meat—like modern Englishmen—and raised their spirits with the fermented juice of wheat or other grain. Pliny first tells us the names of these Spanish drinks, *cælia* and *cerea*. Strabo relates that the Ligurians, probably a branch of the Iberians, ate meat and drank beer.

Another set of originally beer-drinking nations in the south-east of the continent belong however to the great Indo-European family. Archilochus speaks of the nearly related Phrygians and Thracians drinking *brûton*, barley-wine or beer, as early as 700 B.C. Hecatæus says that the Pæonians, a people of Thrace, drank *brûton* made of barley, and *parabia* made from millet with the admixture of a spicy root called *konyzē*. East of the Phrygians lived the Armenians, of whose use of a similar beverage Xenophon was an eye-witness. The celebrated Ten Thousand, after coming down from the Carduchian mountains, rested in some Armenian villages on their way to the Chalybes. Among other things, they found there large tubs of what we must call beer, still brimful of the barley; the drink, which was sucked through straws, was intoxicating when unmixed with water, but very pleasant to those accustomed to it. Xenophon does not say what name the natives gave their drink; but that the taste for beer requires to be *learnt* is proved by what is even now observed in inhabitants of southern countries, who at first dislike the brown drink, but after some practice often become passionately fond of it (note 41). We learn from authors of a later period, that the Illyrians and Pannonians called beer *sabaia* or *sabaium;* but by that time it had become a poor and common beverage, only drunk by the vulgar, while the better classes, who already spoke Latin and Greek, had long since drunk wine instead. When the Emperor Valens besieged Chalcedon, the men on the walls mocked at him, calling him a *sabaiarius*, beer-drinker. Cassius Dio, who ought to know them, having governed Dalmatia and Upper Pannonia, pictures the Pannonians as a poor northern people, living in a wintry climate which produced neither wine nor oil, and not only *eating* but *drinking* their millet and barley. More than two centuries later, the remarkable report of Priscus, who traversed the Pannonian

plains in 448 A.D., with the Greek embassy sent to King Attila, furnishes a vivid picture of the country and the habits of its mixed races. Instead of wheat the embassy were everywhere supplied with millet, and instead of wine with *mead*—so-called by the natives; while the servants got millet and a drink prepared from barley, which the barbarians called *camum*. But we are not told *which* barbarians used this name; certainly not the Huns, for the word is more ancient than the arrival of that horde in Europe. In Ulpian's Digest (beginning of the third century) *camum* is not to be reckoned in legacies as wine; and in the so-called edict of Diocletian of the year 301 the maximum price of *camum* is prescribed among other things. The word seems to be Celtic, and may have become domesticated in Pannonia during the great Celtic migrations, or been brought there by Roman soldiers. All this proves that in what is now Hungary, in Illyria and Thrace, that is, in the larger northern half of the Greco-Turkish peninsula; in Phrygia, Armenia, Egypt, Spain and Portugal, and down to the mountains of the Genoese coast, beer—now almost unknown to the common people in those countries—was once in general use.

Turning to the inhabitants of Central and Northern Europe, the Celts, Germans, Lithuanians, and Slavs—all of them nations of Indo-European blood—we get our oldest account of the food and drink of the first-named people, the Celts, from Pytheas of Massilia, who probably lived in the time of Aristotle, or soon after. Strabo reports him as saying of the nations with whom he became acquainted on his coasting voyage to the Northern Sea, that they had "hardly any garden fruits or domestic animals, that they fed on millet and other herbs, berries, and roots; while those who cultivated corn and honey prepared their *drink* also out of those substances" (therefore beer and mead). The winter of the Scythians, that is, of northern peoples in general, the long nights, the fur clothing, subterranean dwellings, and lastly the *fermented drink* instead of wine, are described by Virgil (Georg. iii. 376–383) in almost the same words as by Tacitus afterwards:

"Et pocula læti
Fermento atque acidis imitantur vitea *sorbis*."

At the beginning of the first century B.C. beer was the popular beverage of the Celts in Central France, while the upper classes already drank Massiliote wine. Celtic beer is not seldom mentioned by later authors; in Northern France, Belgium, and the British Isles it held its ground both under the Roman Empire and through the Middle Ages, and does so to the present day. The Emperor Julian, who had seen and no doubt tasted it, but who clung to classical manners and recoiled from the barbaric, whether east or north, ridicules the Parisian pseudo-Bacchus in a well-known epigram, "Child of the bearded barley, wilt *thou* call thyself Dionysus?" and so on. Ammianus knows the Gauls as a people fond of wine, but forced to put up with beer and cider as substitutes. The *korma* of Posidonius, *kourmi* of Dioscorides, still lives in Celtic languages, with the usual change of *m* into *v* and *f*. The word may be of the same origin as the Spanish *cerea*, in which case both name and thing may either have come from Spain to the Celts, or travelled with the Celts from Gaul to Celtiberia. In a more developed form, as *cervesia*, *cerevisia*, it occurs first in Pliny, then quite commonly in the Middle Ages, and still exists in the Romance tongues, as French *cervoise*, etc. Another Celtic word, *brace*, meaning first a kind of grain (spelt), then malt, beer-spice, and beer itself, has, with its numerous offshoots and the general sense of "fermentation" running through them, found its way into Middle Latin, the N. Romance tongues, and even German. A proof of the deeply rooted custom of beer-drinking among the British Celts is afforded by the life of St. Bridget. That saint repeated the miracle of the marriage at Cana, with the difference that she changed the water into beer. She also increased the store of beer, milk, and butter by a mere glance of the eye.

East of the Celts, the Germans became the more addicted to beer-drinking the more they turned their attention to agriculture. Cæsar does not speak of beer as a German drink, but a century and a half later Tacitus does; though Pliny, when he mentions beer, is silent as to the Germans. These, when pressing forward to the Lower Rhine and the sources of the Danube, must have soon adopted the use of beer from the Celts; those on the Lower Danube must have found the beverage among the primitive Thracians and Pan-

nonians, and were probably till then unacquainted with it; but it is a well-known fact that barbarians adopt nothing more readily than the means of intoxication. Grimm derives the German word *bier* from the Latin *bibere*, and the North-German word *ale* (which passed to the Finns and Lithuanians) from the Latin *oleum*. Those who are startled by this, must remember that beer is a product and a pleasure of the *agriculturist*, and that its manufacture, even when rude, demands a knowledge of technics only possible where agriculture is practised; that there was a period when the Germans roved through Europe as a pastoral nation; that at the period when we first become acquainted with them, they were only beginning to adopt a settled mode of life, and that it is therefore foolish to regard beer and beer-drinking as originally German, and inseparable from the essence and idea of Germanism; that, if the use and brewing of beer had been the ruling characteristic custom of the Germans, the ancients would not have been so chary of mentioning it, and would not have withheld from us the names of beer and ale, for they reported all the Thracian, Spanish, and Celtic names of the things that struck them as strange; that, finally, the nearest neighbours of the Germans, the Prussians, in the time of Wulfstan and King Alfred, drank only mead and fermented mares' milk, and were ignorant of beer, which allows us to make certain inferences as to the Germans in the earlier stages of their civilization. In any case, the raw *fermentum* which was drunk in the "subterranean dens" of the Germans of Tacitus, would be very distasteful to their modern and fastidious descendants. To say nothing else, let it be remembered that the hop-plant only reached Germany (apparently from the east) in consequence of the German movement against Rome, though it has now frequently run wild, and that the mixing of this narcotic plant with beer only came into gradual use in the Middle Ages. It is true that St. Columban, about the year 600, once found a *cupa* filled with beer, and holding about twenty-six *modii*, among the Suevians, who were about to offer it to their god Wodan; but in the course of the Middle Ages beer went almost entirely out of use in South Germany, owing to the same agencies as in South and Central France; so that Bavaria became entirely a wine-land, till in recent times North-

German beer, by improved methods of preparation, especially the art of making it keep, and by cheapness of price, again recovered the ground lost. Beer, which at the beginning of European history was chiefly a Celtic beverage, is now considered a distinguishing mark of the German man and German manners; so completely do modes of civilization, in the course of long periods, shift from land to land and from nation to nation, and so easily is he deceived who has his eye on the present alone! At the same time, we allow that *malt*, that is, the melted, softened, is a true German word (so the all-healing "extract of malt" can boast of being at least half German); but *brewing* is a word whose origin cannot be decided with any certainty: the Thracian *brûton* looks as though it must mean the brewed; the Lithuanian *bruwẽle*, brewer, is isolated, and must have been borrowed from the German. The Gothic *leithus* (=sicera, intoxicating drink), which is also found in the other Teutonic tongues, and has only lately died out in High German, seems identical with the Old Irish *lind*, now *linn*, *lionn*, *leann* or *llyn*, according to the dialect, so that *leithus* stands for *linthus*, and is probably borrowed from the Celtic, especially as it is wanting in the Slavic.

Still farther east, the Lithuanians have borrowed their *alus* (beer) from their German neighbours, but the Slavs have formed their own *pivo* quite in an abstract manner from the verb *piti*, to drink. The Old Slavic *olŭ*, *olovina*, sicera, New Slavic *ol*, cerevisia, and Wallachian *olovin*, have the same origin as our *ale*, Old Norse *öl*. Another Slavic word, *braga*, *braha*, *braya* (a common drink similar to beer, Lithuanian, *broga*), points to the Celtic *brace*. As it is wanting in the Teutonic languages (a sign of late and foreign derivation), and as it may have been borrowed by the Lithuanians from the Slavic, perhaps after the introduction of brandy, it may have reached the Slavs after the time when Celtic races had wandered back again to Bohemia and Pannonia, and into the Danubian districts. Of the two Finnic and Esthonian expressions for the commonest small beer (potus vilissimus ex hordeo), *kalja*, *kalli* and *taari*, *taar*, the first resembles the Spanish *cælia;* not that we would venture to deduce from it an Iberian-Finnish relationship or connexion.

In the lime-tree forests of the east of Europe, among the nomads and half-nomads of the Volga region, quite at the back of the Slavs, the intoxicating drink made of honey played a greater part than beer, and was certainly much older. It may be presumed that *mead* was a primitive drink of the Indo-Germans when they migrated into Europe, and that it only, like so many other things, lasted longer in the east of the continent. In Greece, where beer-drinking was always considered a barbaric custom, we find here and there some traces of a drink made of honey having preceded the wine period. The Taulantians, an *Illyrian* people, made wine from honey. "When the honey is squeezed out of the combs," says Aristotle (besides other processes), "an agreeable strong drink, like wine, is produced. Some persons succeeded in producing the same in Greece, different in no way from old wine; but afterwards, with all their exertions, they could not hit upon the right mixture." It is perhaps a sign of the abundance of honey in the regions beyond the Ister, that the Thracians in the time of Herodotus said the country was so full of bees that it was impossible to penetrate into it. The same thing was once believed of Lüneburg Heath. Mead is further distinguished as a *Scythian* beverage, made from the honey of wild bees. The Byzantine envoy Priscus gives the native Pannonian name *medos*, which is identical with the Old Irish *mid*, Old Cambrian *med*, and the Slavic *medŭ;* the last being not only honey and mead, but sometimes (in composition) standing for wine, like the Greek *methu*. The modern Lithuanians distinguish *medus*, honey, from *middus*, mead; in the corresponding German word the meaning of honey has entirely disappeared. Even now in Slav countries beer is not the popular, indispensable, traditional drink; it is true mead also has become rarer every year in Russia and Poland, principally because sugar has put an end to bee-keeping; its place is taken by that devilish invention, brandy, which decimates the present generation, and poisons the life-springs of the next.

BUTTER.

The history of butter runs parallel to that of beer. Butter may be termed a product of the art and habits of the shepherd, as beer is of those of the husbandman. Milk kept in skins would of course, when carried about on horseback or in a waggon—and all northern nations rode in waggons—be churned into butter, and the effect produced on cream when exposed to the warmth of the stove was similar. The butter thus separated could be used either for eating, for anointing the hair, or as salve for wounds. The Greeks and Romans of the best period were ignorant of butter, and there is no sign of their having been acquainted with it before the introduction of olive oil. In spite of this, rather early testimony describes the nations in the vicinity of the two classic lands as *making butter*, which they must therefore have learned to produce *after* the dispersion of the nations. That great traveller, Solon, speaks of the fat obtained by stirring milk, and uses it as a simile for the gain which selfish leaders know how to extract from political disturbance. Before the time of Herodotus, Hecatæus said that the Pæonians on the Strymon, the same that lived in pile dwellings and brewed two kinds of beer, "used salve made of the oil of milk." The comic poet Anaxandrides, who flourished about the middle of the fourth century B.C., speaks of rough-haired, *butter-eating* men sitting at the table of the Thracian king Kotys, who married his daughter to Iphicrates. Herodotus had heard a vague report of a Scythian mode of treating the milk of mares; after saying that the nomadic Scythians used to blind their slaves, he continues, "they make them sit round the hollow wooden milk-vessels and stir (or swing) them round and round; the stuff that rises to the top is skimmed,

and considered more valuable than what sinks to the bottom." Hippocrates describes the process more particularly. "The Scythians," he says, "pour mares' milk into wooden vessels, which they then shake; thereby the parts are separated, and the fat, *which they call boutyron*, being light, swims at the top, while the heavier portion, sinking to the bottom, is taken out, dried, and thickened, and is then called horse-cheese; in the middle is the whey." This knowledge of the substance and the name was no doubt obtained from Greek colonists on the Pontic coast (note 42). However, Aristotle seems either ignorant of, or not to have noticed, the general use of butter, at least he never mentions the name, production, or use of butter in his long description of the milk of animals; at the very most a few passing words might be supposed to relate to butter. By the physicians *butyrum* is now and then mentioned as a medicament; but Pliny, and even Galen, still think it necessary to explain both the word and the origin and use of the article to their readers. We may presume that as the Thracians and Scythians made butter, the Phrygians would do so too; and in fact Hippocrates has an expression, *pikerion*, that seems to indicate Phrygian butter. A small quantity of butter—very small compared with the other articles necessary for the royal table—is mentioned as being daily furnished for the Persian court. The butter is named along with sesam oil and terebinth oil, while the absence of olive oil from the list is characteristic. A verse in the Old Testament shows that the Jews, at least at a certain period, were acquainted with butter; Proverbs xxx. 33: "Surely the churning of milk bringeth forth butter." The same thing seems true of the half-Semitic island of Cyprus, where butter was called *elphos* (Hesychius), which Gesenius explains as Phœnician, but John Schmidt as the Sanskrit *sarpis*. In the "Periplus maris Erythræi" (written under Titus and Domitian), it is said that butter was brought from India to the ports of the Red Sea, and that tropical land is spoken of as rich in rice, wool, sesam oil, and butter; wounded elephants were healed there by being made to swallow butter, or by having their wounds smeared with it. Strabo says that in Arabia, in the country of King Aretas, the army of Ælius Gallus could only get butter instead of oil.

From Strabo also we learn that the Ethiopians of the utmost south used butter and fat, and the Lusitanians in the far west, butter instead of oil. No doubt this Indian, Arabian, Ethiopian, and Lusitanian butter was a liquid fat, just as, in the present time, the Bedouin Arabs are greedy *drinkers* of the butter they obtain from the milk of their sheep and goats. At the feast held in Sicily in honour of the return of the Erycinian Venus, the whole neighbourhood around her temple smelt of butter, as a proof that the goddess had really returned from Africa. The temple on the promontory of Eryx originally belonged to the Elymians, a nation whose origin is doubtful and hidden in legends. Whether they were a remnant of the Iberian race spread through the islands of the western Mediterranean, or had really immigrated from Asia, they are spoken of as a cow-keeping race, and worshipped a corresponding deity, whose presence was announced by the butter, whether used as ointment on the hair and body or steaming in the pan. Pliny speaks of barbarians in general, which from his point of view meant principally Germans, as "delighting in butter, the possession of which distinguishes the rich from the poor." The rich were able to keep butter, because they did not immediately consume the milk of their large herds. Pliny's description of the making of butter, however, is confused and unpractical, another proof that the article was foreign to the classic world. In another place he remarks that the more civilized and half-Romanized races used butter, as well as milk and eggs, in making pastry. At this time, then, appeared the art of making cakes, which had remained undeveloped among the Greeks and Romans for want of butter, and because of the very slight use they made of yeast—the use of which is likewise a Northern custom. It is remarkable enough that the word *butter* came to most nations of Western and Central Europe in a round-about way from the Pontus Euxinus across Greece and Italy—two countries which scarcely knew and did not value the article designated by that word. Perhaps a trace of its origin is preserved in the Magyar word *vaj;* Lapp. *wuoi;* Finnic and Esthonian *woi*, *woid*, etc.

The art of rendering butter, by means of repeated washing,

patting, and salting, as pure and firm as we now see it, seems to have originated among the North-German races. Even now the difference between the butter of North and of South Germany consists in the mode of preparation; in North Germany the butter is *salted*, as in Scandinavia and England; in South Germany butter is eaten fresh, and food is prepared with *schmalz* (the smelted, melted), that is, liquid butter. In the Alemannian districts (not in the Swabian) this butter-schmalz is called *anke* (a word that Grimm considers akin to *ungere*), and also *schmutz*. The Scandinavians call butter *smear* (Swedish *smör*, *smörja*, etc., like our O.H.Germ. *anchun-smëro*, *anc-smëro*). *Salbe*, salve, may also have been a primitive German word for butter. The Slavs have the same word for butter as for oil; *maslo*, literally a thing to smear with (*mázati*), thus agreeing with the above German expressions. Both nations, Germans as well as Slavs, smeared their hair, it would seem, with liquid butter, which when it turned rank, would not diffuse the best of odours. That the Celts, at least those of Galatia in Asia Minor, used to anoint themselves with evil-smelling butter is proved by an anecdote in Plutarch. A Lacedæmonian lady visited Berenice, the wife of King Deïotarus; when they came within smelling distance, they simultaneously turned their backs on each other, the odour of ointment being apparently repugnant to the one, and that of butter to the other. In out-of-the-way villages of northern countries this custom has not yet died out among the women and children, but elsewhere it has been supplanted by the use of *pomatum*, in which, as the name indicates, some sweet-scented fruit (Ital. *pomo*) is mixed. Originally it was also a dye for the hair, and only in recent times has it become a mere ointment. The invention, like that of soap, seems to be an old Belgian one, for the ancient Gauls, like their Parisian descendants of to-day, were artists of the toilette.

How can we more fittingly conclude our remarks on the three primitive plants of the earliest higher civilization—the Vine, Olive, and Fig-tree—than by quoting the significant parable in the ninth chapter of Judges? I will write it down, as I fear the Book containing it nowadays is but seldom read: "The trees

went forth on a time to anoint a king over them; and they said unto the Olive-tree, Reign thou over us. But the Olive-tree said unto them, Should I leave my fatness, wherewith by me they honour God and man, and go to be promoted over the trees? And the trees said to the Fig-tree, Come thou, and reign over us. But the Fig-tree said unto them, Should I forsake my sweetness, and my good fruit, and go to be promoted over the trees? Then said the trees unto the Vine, Come thou, and reign over us. And the Vine said unto them, Should I leave my wine, which cheereth God and man, and go to be promoted over the trees? Then said all the trees unto the Bramble, Come thou, and reign over us. And the Bramble said unto the trees, If in truth ye anoint me king over you, then come and put your trust in my shadow: and if not, let fire come out of the Bramble, and devour the cedars of Lebanon." What a picture of Syrian nature and Semitic life! Those monstrous thorns and prickly plants of the desert, the acacia bushes—which a man cannot approach unless he be armed with long iron prongs to grasp and cut—become as dry as skeletons in the summer heat, and afford no "shade;" if by accident they catch fire, the conflagration spreads to the very horizon, devouring the fruit-trees it finds on its way. So the destructive fires of conquest and despotism raged all over Asia, devouring all humble homes, all hives of peaceful industry. The terrible majesty of the rulers of Nineveh and Babylon glowed merciless, like the sun in summer, burning up nations as the thornbush did the cedars of Lebanon; while the Olive, the Fig-tree, the Vine, resembled the man who, within his small province, accomplishes works of peace, and benefits mankind.

And to this day, politics and "music"—in the Greek sense—are sworn enemies. Our great poet experienced it when he attempted to "soar above the trees," and truth and love and, above all, poetry, which cheereth God and man, threatened to dry up within him. From that time he hated Revolution, which seemed to him the flaming thornbush that destroyed both garden and plantation.

FLAX. *HEMP.*

(LINUM USITATISSIMUM.) (CANNABIS SATIVA.)

In what part of the world flax originally appeared is one of the many questions relating to cultivated plants that cannot yet be answered decisively. The dry rocky soil of the Mediterranean countries, the long summer drought and the sudden floods of autumn, not being favourable to the growth of flax, its original home has been sought in the colder and more humid regions of Central Europe. But Egypt and Colchis show that it is not the southern heat but the want of moisture that prevents the thriving of the plant in the classic lands. When we hear of modern travellers finding wild flax in Northern India, on the Altai mountains, or at the foot of the Caucasus, and of its "growing spontaneously all over Macedonia and Thrace," there is always the possibility of a plant so long and extensively cultivated having merely escaped the custody of man and *gone* wild in those places. The twofold use to which both flax and hemp were put is another important fact in their history; namely, the use of their oily fruit for food, and that of their fibre for ropes and tissues. The two uses are not always found combined on the same soil and by the same nation, and it is still a question which of the two first led to the cultivation of the plant. In modern India linseed is pressed for oil, but the plant itself is not utilized; in Abyssinia, too, it only serves for food. Herodotus says that the Scythians threw hemp-seed on hot stones at funeral ceremonies, at once purifying and intoxicating themselves with the fumes; it is added immediately after, that the Thracians moreover wove the plant into clothes very similar to linen, implying that the Scythians did not. We

find the Greeks very early baking linseed, as well as poppy and sesam seeds, in honey, by way of pastry. During the Peloponnesian war, when the Athenians blockaded the Isle of Sphacteria, divers brought to the besieged skins full of poppy-seed in honey and *pounded linseed.* "In Italy, north of the Po," says Pliny, "there was formerly a very sweet rustic food made of linseed, which is now used only in sacrifices;"—from the locality and the sacrificial use we may conclude that this was an ancient Celtic or Ligurian custom.

Far richer than the history of linseed as food is the history of flax as a material for manufacture. The cultivation of flax in Egypt and Western Asia goes back to the remotest antiquity. Linen stuffs and clothes, napkins and fillets, tents and nets, ropes and sails, are met with in universal use among the Egyptians, among the Phœnicians, and in the Old Testament. The mural paintings of ancient Egypt represent the whole process of preparing the flax; the steeping, beetling, combing, bleaching, etc. The microscope has proved that the mummies were wrapped in linen (note 43), although assertions to the contrary have been made. When we consider the length of the linen strips so used, the number of the dead—it would have been an abomination to bury a corpse in wool—and the universal use of linen as clothing by the living; when we hear that the only costume of the priests was of pure linen, they being only permitted to wear an upper mantle of woollen when outside the temple; and when we consider the large exportation going on in those days, we are astonished at the quantity of linen which must have been produced in the regions of the Nile. The world-wide fame of the delicate and artistic fabrics which came from the Nile, and the quality of the linen found on many mummies, prove that the Egyptian excelled in this manufacture. King Amasis made gifts of linen corselets to the Lacedæmonians, and to the temple of Athena at Lindos in the Island of Rhodes, interwoven with figures of animals and embroidered with gold and cotton, the fibres being of such fineness that each thread contained three hundred and sixty of them (note 44). The identity of the Greek *chiton*, *kithon* (tunic) with the Phœnician for linen, *kitonet*, *ketonet*, proves that the latter

bartered linen to the inhabitants of the Mediterranean coasts for other wares. The Phœnicians, in their turn, procured the material not only from Egypt, but from Palestine, where, as the Old Testament teaches us, flax was universally spun by the women, and made into clothes, girdles, laces, lamp-wicks, etc. As the cotton shrub (*Gossypium herbaceum*) also grew in some of the warmer parts of Palestine, it may be that cotton fabrics and fine linen were not always distinguished in language or commerce. Phœnician ships were not only impelled by means of oars, but also by linen sails; but what were the ropes used in the ships made of? Perhaps of the Egyptian plant *byblus*, for flax seems hardly strong enough. When Xerxes erected his great bridge of boats over the Hellespont many centuries later, the Egyptians had to furnish the necessary ropes of *byblus*, and the Phœnician ropes of *leuko-linon*, white flax. Salmasius understood this to mean *macerated flax*, in contrast to raw. But the whiteness of the ropes that support a bridge is of no consequence, strength only is required, and *leuko-linon* means no other than the *leukea*, *leukaia* (spart-grass, *Stipa tenacissima*), which Athenæus says was procured from Spain by Hiero II. for his splendid ship. In Xerxes' time the Phœnicians had long known and used this Spanish plant. The Babylonians too, more in the interior of the Asian continent, wore linen tunics. Strabo already praises the Babylonian town Borsippa for its linen, and what was true of his time, will, in such a stationary country, have been also true of a much earlier period. Farther north the cultivation of flax flourished at Colchis, that is, in the marshy regions at the south-western foot of the Caucasus, where it grew so abundantly and was of such good quality that Herodotus thought it another proof of the identity of race between the Colchians and Egyptians (note 45). This Colchian flax and the fine flax of Carthage were used for all kinds of nets. The whole of the East was acquainted with the art of dyeing linen, interweaving it with lustrous threads, embroidering it with arabesques or figures in gold-thread, etc.; and linen garments, ornamented in this manner, and of an almost transparent fineness, formed the gorgeous costume worn at the courts and harems of the Great King and his satraps. The priests of Western

Asia, those of Jehovah not excepted, were clad, like the Egyptians, in pure white linen, the symbol of light and innocence. When the high priest entered the Holy of Holies, he put off his gay outer garment, and assumed one woven of white *byssus*. This Egyptian and Asiatic custom was afterwards adopted in Europe by the Pythagoreans, the Orphic priests, the priests of Isis, and by penitents and pilgrims; it is preserved to this day in the white surplices used in Christian churches.

The gaily embroidered linen *sails* and *flags* with gold and purple borders, and the similar awnings used on the ships and barks of the Oriental despots were famous; and this half-barbaric luxury was adopted by the Greek kings. Theseus, sailing home from Crete, hoisted a purple sail as a sign of his safety; and Alcibiades, triumphantly returning to his native land from banishment, ventured to run into harbour on a trireme with purple sails. Cleopatra's ship at Actium had also such a sail, by the help of which, towards the close of the battle, she made for the open sea.

Another certainly very ancient use of flax in Asia was to make it into linen *corselets*, by which, in war or the chase, the sharp arrows of the enemy, or the teeth and claws of lions and panthers, were blunted. The Phœnician and Philistine crews in the armada of Xerxes wore linen corselets; so did the Assyrian warriors. Xenophon says that the king of the Susians assumed the *customary* linen armour; and the Ten Thousand found the same sort of war clothing among the Chalybes in Armenia. The Mossynœci, a Pontic nation, wore tunics down to the knee, as coarse as the sacks into which the Greeks of that time used to stuff their bed-cushions when removing or travelling. In the Carthaginian army, which consisted of mercenaries of many nations, the linen corselets was a common piece of armour.

That the Greeks of the epic period could not be ignorant of a product anciently known throughout Asia, goes without saying. The only question is, whether the linen clothing mentioned by Homer was imported, or whether the raw material was native, and spun and woven into stuffs by the women? It is evident from the name, and probably from the connexion in which it occurs, that *othonē*, the fine white linen garment worn by women, that

a product of Asiatic and not of Grecian skill. In the Iliad, we see Helen—a queen who was already acquainted with Semitic and Phrygian luxury, and had just woven a purple garment on which the battles of the Trojans and Achæans were embroidered—hurrying from her chamber wrapped in white linen. On Achilles' shield there are figured—

> "The maids in soft cymars of linen dress'd;
> The youths all graceful in the glossy vest."

In the wonderful Phæacian palace some fifty maidens, dressed in close-woven garments that drip with oil,

> "Form the household train;
> Some turn the mill, or sift the golden grain;
> Some ply the loom; their busy fingers move
> Like poplar leaves when Zephyr fans the grove."

The fine *bed-sheets* for which Homer uses a European name, *linon*, not to be found in the East, might still be of foreign make. Linen, besides fleeces and woollen stuffs, was indispensable for a well-prepared bed:

> "Meantime, Achilles' slaves prepared a bed,
> With fleeces, carpets, and soft linen spread."

The same description applies to the couch prepared for Ulysses on board the Phæacian ship. Of what material the *sails* of the Homeric ships were made, the Odyssey teaches us by the constant epithet of "white sails," that is, linen; and when Calypso brings cloths (*pharea*) to Ulysses, of which to make sails for his new ship, the adjectives used, being the same as those which describes Calypso's own garment (*phâros*), show that these cloths were also linen. Flax, however, could not have been the material of the ropes. Of what these consisted is sufficiently shown by passages in the Odyssey. The broken mast of Ulysses' ship was bound with a rope of *neat's leather*, which is also described as "well-twisted," therefore consisting of many smaller thongs twisted together. But, besides straps of neat's leather, we find in the Odyssey a rope of *byblos*, with which Philœtius causes the outer gate to be fastened:

> "Secures the court and with a cable ties
> The utmost gate (the cable strongly wrought
> Of byblus reed, a ship from Egypt brought)."

Now, as these cables of Egyptian bast must have been brought to the Greeks by Semitic sailors, the cloth of Calypso's dress, and sail-cloth in general, may have been also imported from foreign lands. Homer further uses the word *linon* for *fishing-lines* and *nets*, and for the *thread* on the spindle. Patroclus thrusts his sword into the jaws of Thestor, and drags him out of his chariot as an angler draws out a fish with a flaxen line. Sarpedon calls to Hector to beware of falling into the toils of the enemy, as if caught in the meshes of a linen-net. *Linon* appears in the symbol of the Fates spinning the thread of life: Achilles is to suffer the destiny spun for him by the Fates with linen thread at his birth.

When we remember that even now raw flax is sent by ship-loads to the southern countries, there to be spun by the women and girls sitting outside their houses, or while tending their sheep and goats, we may well imagine the women of Homer (and, like them, the Fates) spinning Egyptian, Palestine, or Colchian flax into thread and weaving it into nets. It is another question whether the word *linon* be not a much older one in Europe, known there before the introduction of flax, and signifying fibre in general, and the stuffs knitted or woven from it. Fishing with the line or the net is a very primitive occupation, and even savages know how to twist fibres and plait flexible matting from all kinds of nettle-plants or from the bast of certain trees. And why should the Fates in Homer spin specially flaxen, and not woollen threads, as they do later? The linen corselets mentioned twice in the Catalogue of Ships may have been Asiatic wares. In one of these passages, which has quite the appearance of being a late insertion, Ajax the leader of the Locrians is called *lino-thorax* (linen-corseleted); in the other, the same epithet is applied to the son of Merops, an ally of the Trojans. It is not surprising that the latter, a half-barbarian Asiatic, should appear in the same dress as the Chalybes described by Xenophon; but the adjective applied to the leader of the Locrians is evidently connected with the manner of battle peculiar to that race of Greeks; they did not

fight man to man, or hurl the spear, nor did they wear iron helmets and shields, but used arrows and slings, shooting at the enemy from a distance, and they wisely wore the lighter tunic, quilted or woven. From that time the linen corselet is now and then mentioned through the whole of Greek antiquity. In the famous oracle, now become proverbial, which was given forth to the Ægians in the middle of the seventh century B.C., the Argives are styled "linen-corseleted." Alcæus (600 B.C.) mentions breastplates of *linon;* at Olympia were preserved three linen corselets offered by Gelon and the Syracusans after their victories by land and sea over the Carthaginians; and Pausanias saw corselets of the same description hanging in various sanctuaries —for instance, in the temple of the Gryneian Apollo; Iphicrates furnished the Athenian warriors with linen corselets instead of the former iron ones, to make them more nimble. Amidst the band of the Æginetes, Teucer the brother of Ajax wears over a sleeveless, richly-pleated under-shirt a linen corselet "double-winged," the two ends of which fall forward over his shoulders; Hercules, over an under-garment with a pleated border, has a linen corselet, but with only one end hanging over his left shoulder; the Locrians retained this kind of garment, both in accordance with Homeric precedent and the ancient custom of that partly pre-Hellenic race; and it was natural that Hercules the hero, armed with club and bow, should wear with the lion's hide the oldest war-costume, not the coat of mail or panoply of the Dorian chivalry. But woollen clothing was the rule among the Greeks, for linen was considered luxurious and effeminate, equally when white and lustrous, and when ornamented by dyeing embroidery and fringes. The Ionians in Asia adopted the long flowing linen garment from their Carian subjects and rich neighbours; from the Ionians the custom spread to the kindred Athenians, who very early adopted Oriental civilization. Herodotus relates as the occasion of it, that after an unlucky battle with the Æginetes, the only Athenian soldier that escaped was pricked to death by the infuriated women, to whom he brought the news of their husbands' loss, with the pins of their brooches that fastened their dresses; it was therefore decreed that they should lay aside the Dorian woollen robe, which was

merely thrown on and fastened with pins, and adopt the Ionian, or, as Herodotus adds, really Old-Carian linen tunic (*kithon*), which was ready sewed and shaped, and required no brooch. But this Ionian linen dress went out of use again at Athens, for Thucydides says, in a much disputed passage, that towards the time of the Peloponnesian war the ancient woollen garment was once again worn by the Athenians, and only a few of the richer conservative citizens refused to abandon their accustomed luxury. Since that time only the women wore linen textures, the finer kinds of which were procured from foreign countries.

There is no certain ancient testimony as to the cultivation of the plant itself in Greece. In Hesiod's poems flax is never mentioned; and even later it is only once named by Theophrastus as requiring a fertile soil. At a very late period Pausanias says that the inhabitants of Elis sowed hemp, linseed, and byssus, according to the nature of the ground. Leake, in his "Morea," says that flax grows in Elis even now, but is of a coarse kind. It is certain that at no time did flax hold a prominent place in Greek agriculture as it did in many parts of Asia.

Linen clothes and stuffs must have reached Italy at an early period. If Diogenes of Laërtē be right, linen was not yet known in the cities of Magna Græcia at the time of Pythagoras, *i.e.*, the latter half of the sixth century B.C., so that the philosopher, unlike the later Pythagoreans, was obliged to dress in pure white wool; but probably what is meant is, that the Ionian linen dress was not in use at Croton, and Pythagoras dressed like every one else. The Latin word *līnum* does not agree in quantity with the Homeric *līnon*, but it does with the usage of the Athenian Comic poets; therefore, if it was a borrowed word, it had come from a district whose dialect was nearly related to the Attic. At an early period we hear of old Roman *linen* books, *libri lintei*, to whose authority some annalists still refer; from the name we may suppose that they were written on *bast*; it could not be real linen, because the ancients did not weave long pieces of stuff intended to be cut, as we do, but single articles of apparel ready for immediate use. From Livy we learn that after the middle of the fifth century B.C. the Etruscans of Veii wore linen armour; at least their king,

Tolumnius, wore a linen corselet when he rode to battle, for he was killed by A. Cornelius Cossus, who dedicated the *thorax linteus* of his vanquished enemy to the temple of Jupiter Feretrius in the Capitol. When that temple, after falling into decay, was restored by Augustus, he read the inscription on the thorax itself, so that its genuineness could not be doubted. The Faliscans, neighbours of the Veians, who had taken part in the same battle, are described by the poet Silius Italicus as wearing linen. Another Etruscan city, the ancient Tarquinii, not very far off, supplied linen for sails to the Roman fleet towards the end of the second Punic war, when all the allies were obliged to furnish whatever material their several countries produced. The whole region of the Tiber, where it flowed to the sea through shrubby wildernesses, is described by Gratius Faliscus as growing flax. That damp region was not only peculiarly fitted for the plant, but was the scene of a very early commerce. Livy tells us that the Samnites, towards the end of the fourth century B.C., raised two armies, one having shields overlaid with gold, and one with silver, and both wearing plumes on their helmets; the warriors with gilt shields wore parti-coloured linen tunics, those with silvered shields white tunics, the coloured ones being probably dyed and woven in the distant East, for their possession of the precious metals of itself implies commerce with foreign countries. Still more significant is another event reported by Livy, which till now has scarcely attracted the attention of mythologists. In the year 293 B.C., the Samnites with great difficulty collected an army of 40,000 men near Aquilonia. In the centre of the camp was a space two hundred feet every way, surrounded with trellis-work and planks, and roofed over with linen. There, in accordance with old traditions and the text of a *liber linteus*, a sacrifice was offered up, and then the nobles of the people were led in one by one. The sight of the unusual form of sacrifice, the altar in the midst of the covered space, the newly-slaughtered animals lying around, and the centurions standing with drawn swords, greatly impressed the man who entered; he felt more like a victim than like a sacrificer. He first had to swear not to reveal what he saw and heard, and then, in a horrible formula, invoking destruction

on himself, his family, and his kindred, he made a solemn oath to follow his leaders to battle, never to fly from the field, and immediately to kill any one whom he saw attempting to do so. When some men, at the beginning of the ceremony, refused to take the oath, they were killed at the foot of the altar, and the sight of their corpses made those who followed more compliant. The nobles having thus bound themselves by oath, the general singled out ten men, whom he ordered to choose each a companion, and these again others, so that finally an army of 16,000 was assembled. This legion was called the *legio linteata*, from the covering of the place where they had sworn to conquer or to die. They received splendid weapons and plumed helmets; nevertheless they were completely destroyed by the Romans in one bloody battle. But why was the place covered with *linen*, and why was the legion named from that fact? Possibly under the operation of Pythagorean religious ideas, by which the Samnites, as other things prove, were not uninfluenced. When the Romans entered upon the inheritance of the Samnites and Greeks, linen garments, *vestes linteæ*, were, as in the East and in Greece, a costly and luxurious apparel: among luxuries of the East, such as purple from Tyre, incense, sweet-smelling essences, fine wines, gems, and pearls, Cicero mentions linen dresses, much as we say "diamonds and lace." The boys who served at sumptuous banquets wore tight-fitting linen, so as to be nimbler in their movements. Beautiful freed-women revealed rather than hid their charms by gauzy textures of the isles of Cos and Amorgos; rich magnates and emperors spread a linen roof over the theatre or forum to protect the spectators, or the judges and the judged, from the rays of the sun. Amid the changes of fashion, of which there were complaints as early as the Republican period, new shapes in linen dresses, kerchiefs, fillets, etc., were frequent; there were the *supparus* (originally the name of a small sail, then of a woman's dress, like the later *camisia*, shirt or chemise), and the *sudarium*, a kind of napkin or handkerchief, which—as Catullus says that it came from a celebrated flax region in Spain, and Vatinus calls it *white*—must have been made of linen. It was afterwards called *orarium*, and formed part of the dress of Chris-

tian priests at mass. Linen thread was used for fishing lines, for tying letters, for weaving stout bathing towels and table-cloths; the latter, under the name of *mantelia*, *mantela*, intended to preserve the costly wood from being marked by the dishes. But the plant itself could hardly, or only to a small extent, have been cultivated in that part of Italy which lay south of Rome, although that half of the peninsula was, in the early times of the Roman dominion, the civilized part, that which gave and took, the high road into the old world, the part to which one might say the eyes of the capital were turned. Cato never alludes to flax, Varro but slightly, and Columella names it once, together with pease, beans, and lentils, as a thing that might possibly find a place in some corner of the kitchen-garden. But a chapter on flax and its culture in the nineteenth book of Pliny opens to us a very different view, one that carries us outside of the Græco-Roman world. Here we learn that though on its introduction to Europe the culture of flax, which had long flourished on the Nile and in the heart of Asia, did not take kindly to the warm mountainous regions of the two classic peninsulas, it soon throve luxuriantly in the damp, foggy plains of the barbarians, in freshly broken land still rich in the *humus* of the forest. Herodotus describes a maiden of the Pæonian nation in Thrace with flax on her spindle; at the opposite end of Europe, Spain is celebrated both in early and late times for its flax production; at the battle of Cannæ the Iberians wore purple-bordered linen tunics; fine sieves of linen-thread were originally a Spanish invention; the Emporians manufactured linen; the fine product of Tarraco (called there by the Phœnician name *carbasus*, itself supposed to be the Indian word for cotton) and of Sætabis, stood in high repute, and is often mentioned; and though this may not surprise us with regard to places on the Mediterranean coast, which were early open to various civilizing influences, we hear with astonishment of flax being cultivated by the rude Asturians in the distant city of Zœlæ on the shore of the Atlantic Ocean; and of linen, armour being worn by the wild robber-tribes of Lusitanians in the interior. But in Italy there had been, from the earliest times, a zone of flax-culture in all the parts accessible from the Adriatic,

both in the well-watered plains, in the tract inhabited first by Etruscans and then by Celts, and in the Ligurian and Venetian districts. Pliny mentions different kinds of North-Italian flax as the best in Europe after that of Spain; namely that of Fanza in the Romagna (even now highly valued), that of Retovium (near Voghera), and that of the *regio aliana* between the Po and Ticino (the two last being on Old Ligurian ground). We have already seen that the Etruscans cultivated flax very early, another proof of the connexion of that people with the north, and of the Tiber being a border line where two civilizations met. As for the other side of the Alps, Pliny describes all the inhabitants of Gaul as weaving linen, up to the Celtic inhabitants of the Netherlands, the Morini, who were considered the outermost nation, so that Belgian flax and Flemish linen can date their pedigree from the first century A.D. There is a trace of this in the Italian word *renso*, "fine flax," from the town of Rheims whence it came. Pliny says, "This industry has spread even to the Germans at the other side of the Rhine; the German woman knows not a dress more beautiful than the linen one; they sit in subterranean chambers and there spin and weave." Tacitus says much the same, *i.e.*, that the women dress like the men, but more frequently wrap themselves in linen drapery ornamented with crimson.

While we thus find the flax industry early adopted by the nations of Central Europe, because it suited their soil and climate, by Celto-Iberians on the Bay of Biscay, by Ligurians on the Upper Po, and by Thracians, Celts, and Germans; the very name of linen shows that they had all derived the plant from the classic nations, for that name extends all over the Continent, from the Basques at the foot of the Pyrenees, through all the Celtic and Germanic races to the Lithuanians, Slavs, Albanians, Magyars, and Finns; and is found in languages of the most varied origin (note 46).

And not only did linen become a common necessary of life and find several new applications among the barbarians, but those new uses made their way into the customs of the then declining ancient world. Linen as an essential part of everybody's dress is of northern origin. As the use of stuffed beds, bolsters, and

pillows covered with linen, was introduced into Italy from Gaul —for antiquity was content with mere *stramenta*, *i.e.*, layers of carpets and soft stuffs—so the linen under-garment, the true *shirt*, with which the Greeks and Romans were unacquainted in its present form, was introduced by the barbarians, under the new Gallic name of *camisia*, "chemise," which occurs for the first time in St. Jerome. Before that time, only women of high rank wore linen next the skin. Pliny remarks that even in his time the family of the Serrani would not tolerate the shift as an article of female dress, doubtless from a conservative attachment to old customs. It was not a southern and classic, but a northern and barbarian taste, that made the Emperor Alexander Severus, as his biographer Ælius Lampridius reports, delight in fresh white linen because it was not rough like wool, and scorn the luxurious Oriental garment, purple-striped or even embroidered with gold thread. A few decades later, the Emperor Aurelian presented the Roman populace with sleeved white tunics manufactured in different provinces, and also undyed linen ones from Egypt and Africa. We learn by an edict of 301, that the long-celebrated Syrian looms already furnished coarse linen for the common people and slaves, there being among the articles mantles of Gallic cut, with hoods like those now worn by monks; binders for wrapping the feet in place of the modern stocking; sheets, and covers for mattrasses and pillows, and various other things copied (we believe) from the Gauls, and which became common necessaries among the lower classes only during the Imperial period. A century later, St. Augustine tells us in so many words that "outer garments are of wool, inner garments of linen," which the saintly Father, with the mystical wit of the Middle Ages, compares to the carnal and the spiritual mind.

Neither Pliny nor Tacitus tells us whether the raw flax spun by the German women was imported from Gaul, like the red dye, or whether flax was already cultivated in the interior, or limited to the country on the Rhine, which had been the first to share in Gallic culture. The dress worn by Cimbrian prophetesses—whom Strabo describes as going barefoot, dressed in mantles of fine flax confined by iron girdles and brooches, can hardly point

to so early a cultivation of flax on the Lower Elbe; for the Cimbrians, if really of Germanic race, had, before their destruction by the Romans, roamed through Celtic, and even Celto-Iberian lands, and had certainly become somewhat mixed with that race. A legendary event is reported in the pre-Italian history of the Longobards, which might possibly allude to a German cultivation of flax. The Herulians, overcome by the Longobards, mistook in their flight a field of blooming flax for a lake, threw themselves into it as if to swim, and so were overtaken by the enemy and destroyed. But the scene of this legend is the region of the Theiss in Pannonia, where flax had long been cultivated; and the time is late, about 500 A.D. As the movement of German tribes went on, linen clothing became more and more widely spread among them, and towards the end of that movement it is expressly called the national dress of the Germans. When the Goths, under the Emperor Valens, crossed the Danube, their linen dresses trimmed with tassels excited the greed of the Greeks. The Franks wore hose, some of leather, some of linen (Agathias), and the elders of the Visigoths dirty linen and short fur coats (Sidon. Apollinaris). Formerly, a shirt of glossy linen, with red linen hose, was the costume of aristocratic Franks. But in the time of Charlemagne the young princes already preferred the short, striped Gallic *sagum*, while the emperor continued to use the old national costume. When the Germans—who for many centuries had been quiet inhabitants of the coasts, and had only dared to plunder the neighbouring shores of Belgium in light boats or the hollowed trunks of trees—suddenly began to undertake distant piratic voyages; the result may be due as much to the increasing extension of flax and the production of sail-cloth, as to their growing acquaintance with iron and Roman methods of shipbuilding. At all events, in Cæsar's time the Veneti of Brittany, who frequently crossed to the kindred races in Britain, used sails of skin or leather and iron cables; "Either," says Cæsar, "because they were ignorant of the use of flax, or, what is more likely, because the storms are so violent in those regions." But of what substance were the Venetic sail ropes, which the Roman sailors cut in two with sharp

sickles fixed on long poles, so that the ships became immovable, and were obliged to surrender? Probably of leather thongs, for not only the Greeks of Homer's time, but the Illyrian Liburnians used such ropes. The Normans cut their cables out of the skins of walruses and seals; and down to modern times the fishing-nets in Iceland were made of strips of leather. Where hempen ropes have been found, there probably the sails were hempen also. In Pliny's time sailcloth was manufactured all over Gaul, and the industry had spread to the districts at the mouth of the Rhine, from which we may conclude that it was not known there before. The Suiones, ancestors of the Normans, did not (according to Tacitus) know the use of sails, or separate rows of oar-benches; both ends of their ships were alike, so that they could land anywhere without turning—an arrangement imitated by Germanicus in part of his ships when he cruised in the North Sea in 16 A.D. These ancient northern ships were no doubt exactly fitted for threading the islands, belts, and fiords of the northern coasts; in the summer they probably even crossed from the Isle of Gothland to the Gulfs of Finland and Riga: but it was only after the adoption of sails and iron from the south that the adventurous voyages of the Vikings commenced.

The German word *segel*, sail (Anglo-Saxon *segel*, Old Norse *segl*), was probably of Celtic origin (Old Irish *seol*, *sóol*) or came direct from the Latin *sagulum*. The Lithuanians and Poles borrowed the German word; the Bohemians resorted to the phrases "piece of linen," and "wind-catcher;" the South Slavs said "skirt" for sail; the Russians adopted the Greek *phâros* in the form *parus* —all quite late productions.

Since those times flaxen textures have always been the favourite clothing of the German. The southern nations, who lived more in the open air, needed woollen clothes as a protection against changes of temperature; but the Germans, especially in the north, who were confined to the house in winter, and had an inborn sense of cleanliness, preferred the smooth, light linen which was pleasant to the skin in their close and heated huts, which showed every spot of dirt, could easily be washed, and became softer and more flexible the oftener the process was

repeated. Plutarch praises these qualities: "Linen," he says, "makes a smooth and always clean dress, does not oppress the wearer by its weight, is suitable at every season, and harbours no vermin;" and in fact the last-named torment, from which the much-lauded primitive times suffered to an extent of which our idealists have no idea, was and is a characteristic feature of all fur-wearing nations. In an Old Norse legend, a merman is captured by a king, and of all the things he sees on land, three please him the best: cold water for the eyes, flesh for the teeth, and linen for the body. This legend comes from the very bottom of the German heart. The demonic Frau Berchta and the synonymous Holla, who are represented spinning, and are the patrons of flax-culture, are a proof of the value laid on that industry and its products by national sentiment. At a time when paper money and saving-boxes did not exist, linen, as well as silver vessels, was the sign of wealth, the pride and delight of the mother, and the dowry of the daughters. Jean Paul says somewhere that if the devil desired to seduce a German *Haus-frau*, he would best succeed by making her a present of a roll of fine linen. In Goethe's poem, Alexis exclaims:

> "Nor such toys and trinkets only shall your lover win for you;
> What delights the heart of housewife, that he'll fetch you too,
> Lengths of costly linen! You shall sit and stitch and hem and fell,
> Clothing you and me, and maybe some one else as well."

And the father in Hermann and Dorothea thus expresses himself:

> "Not in vain prepares the mother, for many a year and long,
> Store of linen for the daughter, of texture fine and strong."

For, besides other excellent qualities, linen has that of keeping unspoiled for years, while wool has many enemies.

The Western Slavs were acquainted with flax and linen early in the Middle Ages. We are told that the Bishop of Aldenburg received from the whole country of the Wagrians and Obodrites forty bundles of flax as the tax for every plough; so that those neighbours of the Germans must have cultivated flax at a time when the bishopric of Aldenburg was still in existence. Henry

Duke of Saxony and Bavaria, in a deed dated 1158, ordains that *de unco* (for every hook = plough) *toppus lini unus* shall go to the see of Ratzeburg. At the beginning of the twelfth century the Rani in the Isle of Rügen had no coined money: goods were paid for with linen cloth. In like manner Old Norse codes value everything by yards of linen, which stood at a much higher price than the coarse native cloth—*wadmal*. Farther east, linen was for a long time the general medium of exchange, and even in the eighteenth century it was demanded as passage-toll by Caucasian tribes: "The Dugors," says Güldenstädt, "wanted five shirts or forty yards of linen for every man of my company, two shirts per horse, and five more per carrier in crossing: but my stock of linen did not go so far." With advancing agriculture, flax spread into the interior of the great East-European plain, where the fresh soil of the lake and forest regions was very favorable to its cultivation. Whole villages in the heart of Russia took to weaving linen, and adorned their towels and sheets with red borders, like the Germans of Tacitus. When the country was opened to commerce, sail-cloth became an important article of export, until the cotton manufacture, unnatural, dear and sickly, yet backed by protective duties, drew capital away from this ancient and national branch of industry. Flax throve particularly well in the damp regions bordering the Baltic, and for centuries the linen and tow of Riga, and the linseed shipped from there, were much in request.

Leaving the history of flax among the modern European nations to historians of technics and political economy, we will only mention further the fact, that one of the most important inventions, that of making *Paper* out of linen rags, was rendered possible by the general cultivation and use of flax throughout Europe. It could never occur to the ancients, for in their time there was no large accumulation of rags demanding further application. Perhaps, if the rags of linen clothes, sheets, tablecloths, and the like, had accumulated to the same extent as potsherds, which are said to have formed a whole hill at Rome, this new kind of *libri lintei* might have made their appearance even then; for, in fact, *lint* made of old linen was not unknown to the Greek and

Roman surgeons. With the cultivation of cotton in Western Asia, the knowledge of the cotton-paper of China had also spread to Samarkand, and thence by means of the Arabs to Mecca, and from Mecca to Spain. It must have been in Spain then, that the use of linen instead of cotton rags was first tried; and it is an interesting fact that the town Xativa, the ancient Sætabis so celebrated for its flax under the Romans, produced in the twelfth century A.D. the most excellent paper, which was exported to both East and West. From Spain the art gradually extended to France, Burgundy, Germany, and Italy. Now, as it was paper made of linen that first made the later invention of printing a fruitful one, as the general application of writing to every department of life, and with it the whole of modern culture, rests on the cheapness and excellence of that material—the historian of civilization feels so impressed with the importance of the plant that produces it, that he would fain, in antique fashion, bestow on it the epithet *holy* or *divine*, which the ancients, knowing only half its uses, neglected to do. And do not let us forget the art of painting on canvas, nor the application of linseed oil to painting, which, if not invented in the old home of flax, the Netherlands, was at least brought to perfection there, and raised into a noble branch of art. The East in ancient times may have produced fine textures, and bathed them in the brilliant hues engendered in those sunny lands; but they are outrivalled by our Brabant laces, our Flemish table-linen, our cambrics and lawns, produced amid storm and fog in the environs of the ocean. We also know how to *wash* our white garments with alkaline soaps; Nausicaa and early antiquity could only *rinse* them in running water, while the half-superstitious, half-practical methods of the fullers at Rome had only makeshifts to work with. Just as, in the Middle Ages, the linen sail "that toils for all" (Goethe) had banished the banks of oars, and set free the slaves chained to them; so in these days steam is more and more superseding the sail with its many ropes, and lessening the number of the crew. Cotton, which the ancients only knew from afar, has come and set a thousand factories in motion, and clothed millions of men; and its first serious collision with the linen fibre led to the important discovery

of spinning flax by machinery. Then there came a time of dearth, when King Cotton seemed about to be deprived of his glory, and wool and flax again to take the first rank. But the crisis passed, and without letting cotton go, European industry draws more every day upon the treasures of tropical lands and distant continents, while searching for new fibrous plants and utilizing them by chemical and technical science. We need only refer to jute, China-grass, and the New Zealand flax (*Phormium tenax*), and to the importance these materials have already attained.—In the classic countries, to come back to our point of departure, the cultivation of flax has remained stationary since ancient times. In Greece it is almost *nil.* The well-watered plains of Lombardy and Venice produce valuable sorts of summer and winter flax, which, by careful and peculiar processes, perhaps derived from antiquity, yield a very white and durable ware. Tuscany (the land of the old Etruscans), the Romagna, and the Marches still grow a good deal of flax; but the farther south we go, the more sporadic becomes the cultivation, being undertaken chiefly for the sake of the seed and oil. Modern Italy on the whole, in spite of the many looms of Lombardy, does not in the production of linen come up to countries lying farther north: Hibernia hiding in her fogs; the land of the Batavians; Westphalia, the seat of the Cheruscans; Silesia, the land of the Lygians.

As cotton first became a world-product by being transplanted to America, so did flax when it reached the north of Europe, which formed the colonial country of this Old-Egyptian and Babylonian plant, as America was that of the East-Indian plant.

The twin brother of flax, the *Cannabis sativa* or Hemp, belongs nevertheless to another family, that of the *urticaceæ* or nettles, and has spread through the world in other ways and much later. It was unknown to the Egyptians—not a trace of the fibre of hemp has been found in the wrappings of mummies—and also to the Phœnicians (note 47). The Old Testament never mentions it. It was not generally known in Greece at the time of Herodotus, for that writer describes it to his readers as a strange plant. But the Scythians cultivated hemp, and purified and intoxicated them-

selves by means of the seed; it was therefore in use among the Medo-Persian races at the back of the Western Asiatics; and originally came from Bactria and Sogdiana, the regions of the Aral and Caspian Seas, where it is said to grow luxuriantly in a wild state to this day. The use of *hashish*, an intoxicating drug made of the *Cannabis indica*, finds its parallel in the Scythian custom at the time of Herodotus. The Thracians wove dresses from the fibre of this plant, which did not come to them from Asia Minor—else the Greeks would have been acquainted with it also—but from their neighbours to the north-east on the Tyras and Borysthenes. From the Pontus and Thrace this excellent material for rope was exported to the Greeks, just as the Greek navy now obtains its hemp from Russia. Under the unchanged name of *cannabis*, *cannabus*, the plant migrated in comparatively recent times to Sicily and Italy. When Hiero of Syracuse built his celebrated ship, in constructing which he drew upon all countries for their best materials, the hemp and pitch were procured from the R. Rhodanus in Gaul; so that the hemp there must have been uncommonly fine. Had it been transplanted there from Italy? or had it travelled along the great chain of Celtic nations that already stretched from Gaul to Pannonia and the Hæmus? The satirist Lucilius, about 100 B.C., is the oldest Roman author that mentions hemp. Cato speaks of neither flax nor hemp. When the Spanish broom, *spartum* or *Stipa tenacissima*, was introduced in the second Punic war, it hindered the extension of hemp, which is seldom mentioned, and was probably but little cultivated. Nevertheless it grew luxuriantly in a few fertile regions; for instance, in the celebrated tract of country round Reate, in the land of the Sabines, where it attained the height of a tree. The Greco-Roman name for the plant, originally Median, but also found in the old Indian languages (note 48), runs unchanged through all European tongues, in proof of its origin, the Teutonic tongues making the usual change of *b* into *p* and *f*: A.-Saxon *hænep*, Old Norse *hanpr*, Old High German *hanaf*. The German names for the male and female plants, *fimmel* and *mäschel*, are of Latin or Italic origin; fimmel = *femella*, mäschel = *masculus*, but with a mistaken and reversed application, for fimmel is really the male plant, which,

because it is shorter and weaker, popular prejudice took to be the female. Hemp is now found all over Europe, and is so entirely indifferent to climatic influences that the East Indies and the Russian ports on the Baltic, nay, Archangel near the polar circle, share the English market between them. In modern Italy hemp is grown in large quantities in the districts south of the Lower Po, reaching the height of a man; the produce is partly consumed in Italy for ropes and sail-cloth, and partly exported abroad.

Cultivation for the sake of the seed is unusual in the South, but takes a prominent place in Russia, where, during the long and strict fasts, hemp-oil is commonly used for food. We will finally remark, that the well-known fibre sold in European markets under the name of Canton or Manilla hemp is no hemp at all, but is produced from the stalk of a tropical plant, a kind of banana; it is said to be much more flexible, more elastic, and lighter in weight than the common hemp, having the property of floating on the water, and of not freezing when in a wet state during voyages in the northern regions.

LEEK. ONION.

THE primitive nations of the world, besides making use of and cultivating nutritious plants, animals, and domestic fowls, greedily sought for exciting spices and condiments, among which salt held, and holds to this day, the foremost place. The vegetable kingdom furnished many sharp and pungent juices, discovered at first by accident, and afterwards eagerly looked for on the mountains. According to natural disposition and the degree of culture, their effect on the finer or coarser nerves of the succeeding races was very different. Silphium—"a plant whereof comes benzoin," says Pliny—and which the early Greeks thought the most delicious of condiments, was afterwards quite forgotten; either because it was no longer forthcoming, or, as we believe, because tastes had changed. The *laserpitium*, or master-wort, which, centuries later, the Romans imported from Asia and believed to be the same plant as the Greek silphium, was probably *Ferula asafœtida*, or giant-fennel, the addition of which to his food agreeably tickled the cloyed palate of the aristocratic rake. So, about the onion, people hold very different opinions as regards it even now. The odour of garlic about the Oriental is quite unbearable to the German of Lower Saxony, and the onion-scented breath of the Russian is a wall of separation permitting no approach. By this criterion we might divide the nations into two groups: the garlic-lovers and the garlic-haters; which might be distinguished in Europe as the nations of the Mediterranean, and the nations of the North Sea and Baltic.

If it be true that the plants we are now examining were indigenous to the interior of Asia, where botanists say they have found them growing wild in the steppes; then migration and

intercourse must have extended them very early towards the south-west, in proof of the attraction which such strong condiments have for the natural man. In Egypt we find onions and garlic established articles of food from the very beginning, and the customs of the Egyptians were fixed and settled at an epoch when perhaps no Indo-Germans existed. The Israelites in the wilderness longed for the leek-plants of the Nile-valley (Numb. xi. 5): "We remember the fish, which we did eat in Egypt freely; the cucumbers, and the melons, and the leeks (*khatzir*), and the onions (*betzalim*), and the garlic (*shumim*)." During the building of the great pyramid of Cheops, says Herodotus, 1,600 talents of silver were spent alone in radishes, onions, and garlic for the workmen, as may be read on the pyramid itself in Egyptian characters. As the Egyptians connected even the commonest things with the mysteries of their religion, it was inevitable that these favourite plants should be reverenced as *sacred*, worshipped as gods, and therefore not touched by the pious or by priests. Pliny says that the Egyptians swore by the garlic and the onion. Juvenal mocks at this, saying that in that case the Egyptian gods grew in the kitchen-garden. Plutarch reports that the priests declared the reason why they would not eat onions or garlic was because those plants only grew during the waning of the moon; but adds his own opinion that onions were neither good for fasters nor for feasters, for in the first they awakened desire, and from the last they drew tears. In another passage he limits this prohibition of the onion to the priests of Pelusium, *i.e.*, a locality immediately adjoining the leek-loving Philistines and other Semites. And this is confirmed by Lucian, and still more precisely by Sextus Empiricus, who says it was the worship of Zeus Kasios at Pelusium that excluded the onion, just as that of the Libyan Aphrodite excluded garlic. That Philistæa produced onions is proved by the celebrated onion of Ascalon described by Theophrastus, after which is named to this day the scallion or shalot, *scalogno*, *échalotte*, which our people have Germanized into *esch-lauch*, as if ash-leek. The Cretan onion was similar to, or the same as that of Ascalon—perhaps the Philistines during their early wanderings and voyages had transported this onion from one coast to the

other. The Mother of the Gods, too, like Libyan Aphrodite, excluded garlic-eaters from her temple. For, when the witty and impious philosopher Stilpo, after eating his fill of garlic, lay down to sleep in the sanctuary of the goddess, she appeared to him in a dream, and asked, "Art thou a philosopher, and fearest not to transgress the law?" To which the sage replied, "Give me something else to eat, and I will abstain from garlic." The Israelites, ever since their regretful thoughts strayed from the sandy waste around them to the garlic of Egypt, have remained fast friends of that vegetable, both before and since the destruction of Jerusalem, whether at home in their Holy Land or in the Dispersion under Talmudic and Rabbinic rule. It is not at all unlikely that the much-talked-of *fœtor Judaicus*, which caused the Jews to be despised and repelled by all ancient and modern nations, originated in their general use of this strongly smelling plant. A comical anecdote told by Ammianus shows that in his time the Jews already stood in the same ill-repute. When Marcus Aurelius, victorious over the Marcomanni and Quadi, was crossing Palestine on his way to Egypt, the odour and tumult of the Jews were so disagreeable to him that he exclaimed, "O Marcomanni, Quadi, and Sarmatians! I have found a people even worse than you!" (When a part of the Locrians in Greece were named Ozolæ—the stinking—the nickname was probably due, not to any food, but to their dress: they wore the old-fashioned goat-skins, which exhaled an odour like that of Russia-leather.) From a list of things daily provided for the head-cook of the *Persian* court, we find that there was a considerable consumption of garlic and onions at the Great King's table: besides cummin, silphium, etc., there is set down a talent's weight of garlic per diem, and half a talent of onions of a strong kind. The high antiquity of the onion is confirmed by Homer, who mentions it by the name of *kromyŏn* both in the Iliad and Odyssey. In the Iliad the onion appears as an addition to the drink offered by the fair-haired Hecamēdē to old Nestor on his returning thirsty from the battle; and in the Odyssey the shining tunic of Ulysses is compared to the thin peel of a dry onion. As old, or perhaps older, than these Homeric passages is the name of a once Mega-

rian and afterwards Corinthian township *Kromyōn*, *Kremyōn*, a name evidently derived from the onions grown there. In after ages, Megaris was famed (or defamed) for its cultivation and vast consumption of garlic; a proverb calls crocodile's tears "Megarian tears," such as he sheds who looks at a cut onion. In very old times, when that little country was not yet Dorian or even Ionian, it had been conquered or overrun, first by Carians and then by Leleges, who perhaps introduced the Oriental kinds of *allium*.

The name of the mythic founder of the town, Kromos, the son of Neptune, leads to the supposition of a shorter primitive form of the word for onion (*kromyŏn*) which may be identified with the name extending from Switzerland to Scandinavia, *ramser*, *ramsel*, *rams* (*Allium ursinum*, wild garlic), and the A.-Saxon *hramsa*; Eng. *ramsen*, *ramson*, *buckrams*; Irish *creamh*; Lith. *kermusze*; Pol. *trzemucha*; Russ. *ceremsa*, etc. The Latin *cepe*, *cæpa*, onion, has evidently its analogue in the Arcadian *kapia*, garlic: but the supposition that the word contains the notion of *head*, *cæpa capitata*, takes us to a far-distant stage of speech, when *cap-ut* and *keph-alē* had not yet developed their suffixes. And yet those suffixes date from the time when the European nations were one, for *caput* corresponds exactly to the Old Norse *höfuth* (for *hafuth*), and the Greek word to the A.-Saxon *hafela*, *heafola*; but as the suffixes were still doubtful, the naked root itself may have held its ground among certain tribes, and when the garlic or onion came from the East, it may have been applied to those vegetables. A legend relating to the origin of the Italian Locrians, shows that among them the Greek *kephalē*, head, could also mean an onion-head. When these people first landed in Italy, they swore that they would share the land with the original inhabitants, the Siculians, in peace and friendship, as long as they still trod the earth, and wore their heads on their shoulders. But they poured earth into their shoes, and carried heads of onions on their shoulders, hidden under their garments; and, having got rid of both, they were released from their oath, and took sole possession of the country. Thence came the proverb, "The oath of the Locrians!" (note 49). For a similar play on the words *caput* and *cepa*, see Ovid's "Fasti," 3, 339.

Among the different Greek names for onions, one, *gēthyllis*, has a peculiar interest, because connected with a religious custom, and more likely to be ancient. At the festival of the Theoxenia at Delphi, at which all the gods were Apollo's guests, whoever brought the largest *gēthyllis* (leek-onion) was entitled to a share of the sacrificial feast, the reason being that Lēto, when pregnant, had craved for such an onion.

In Greece, after the date of Homer, as well as in Italy, onions were the commonest and favourite food of the people. Nearly every scene in the comedies of Aristophanes proves this to have been the case at Athens; so do many anecdotes and figures of speech. With increased civilization and consequent polish of manners, and with greater delicacy of the nerves, the former liking changed in the higher classes to loathing. It then meant the reverse of good to wish that any one "might eat onions;" and the smell of garlic was proof of a person's vulgarity, or was considered a remnant of barbarism. When Alyattes, King of Lydia, invited the sage Bias of Priene to visit him, the latter dismissed the messenger with the brief answer, "May the king eat onions?" —that is, shed tears. The same story is told by Plutarch of Pittacus of Mitylene, with an addition: "May the king eat onions and swallow hot bread!" The Homeric custom of seasoning wine with onions, more fitted for sailors than for kings, aroused the astonishment of later generations, who, however, supposed that the onion meant was the sweet onion, which is still eaten in the East, and has such a mild taste and smell that it can be eaten raw, while another kind was termed the weeping onion. In a Greek comedy the Athenians, "according to ancient custom," serve the Dioscuri with cheese, olives, and *leeks* at breakfast; and Varro says: "The words of our forefathers, no doubt, were odorous of garlic, but the breath of their spirit was all the nobler." Plautus and Aristophanes speak of the smell of garlic as a sign of poverty, and disgusting to the noble. In Horace's well-known Third Epode, that delicately organized poet expresses, half in joke, his intense dislike of garlic. "Hard is the stomach of the reapers," he exclaims; "to me garlic seems a poison given me by a wicked witch! In future let it be given to criminals instead of hemlock!

It scorches my limbs like the sun of Apulia, like the Nessus-garment of Hercules! Should ever, O Mæcenas, the whim take thee to eat of this herb, may thy mistress refuse to kiss thee, and fly from thy embrace to the farthest end of the couch!" The last idea is often repeated by Greek and Roman poets (to-day one might say it of smoking or taking snuff); in a comedy by Alexis or Antiphanes, the hero, when dining with boon-companions, refuses to eat leeks, because his breath might be disagreeable to his lady-love. Xenophon, in his "Symposium," makes Charmides say in excuse of a husband who had a jealous wife: "Worthy sirs, Niceratus likes to come home smelling of onions, so that his wife may feel sure that no one has been kissing him." In the same way Aristophanes makes an unfaithful wife chew garlic early in the morning, to prove her innocence to her husband when he returns from his post as sentry.

On the other hand, the penetrating taste and smell of onions and garlic caused people to imagine that those vegetables possessed a magic power of breaking charms and neutralizing poison. This power was supposed to pertain to all strong-smelling substances, for instance, smoke of sulphur, which purified a hall stained with murder. An essay on the healing-power of onion-bulbs was attributed to Pythagoras. Garlic was also used in the composition of various medicines, especially *among the peasantry*, says Pliny. It is said that Pythagoras taught people to fasten a squill to their thresholds to ward off evil. Just as, in the Odyssey, the herb *môly*—so-called by the gods, with a black root and milk-white flower, difficult for men to dig up, but easily obtained by the gods—makes Ulysses strong to frustrate the arts of Circe; so afterwards, in many parts of Greece, various herbs which served as counter-charms, now one, now another, were called by the same name, and among them all kinds of the *allium* or garlic species. In certain districts of Arcadia, as Theophrastus tells us, in the important 15th chapter of the ninth book of his "History of Plants," there grew a herb *môly*, with a round, onion-shaped root, and leaves like those of the squill, which served as an antidote to poison and magic, but unlike the herb described by Homer, in that it was quite easy to dig up. In the north of Asia

Minor, and in the Pontus region, where all kinds of poisons and antidotes, charms and counter-charms, styptics and roots sove reign against a serpent's bite, were to be found, the mountain-rue (*Ruta graveolus* or *montana*), bore the Homeric name of *môly*, and was doubtless used in purifying corn-fields. This name had been brought into that region by the Greek colonists with their Homer, and had passed, like other Grecisms, into the Cappadocian and Galatian languages. For even if *môly* was originally a stranger, it seems a hundred times less probable that the presumable parent word should have been preserved for so many centuries among the immigrating Galatians and the distant Cappadocians than that Homer was in this, as in so many other cases, the common source.

The Germans became acquainted with the real onion through the Italians, as is shown by the German names, *Zwiebel* and *Bolle*, both derived from the Italian *cipolla*. But north of the Alps, another remarkable word crosses Europe from east to west, through the languages of the three great races, Celts, Germans, and Slavs, with the primary meaning of "succulent herb," and the more definite meanings of "leek, onion, garlic": Old Irish *lus*, Welsh *llysian*, Corn. *les* = herb, leek (*s* for *x*, as in *dess* = dexter, *ses* = sex, *ess* = ox, etc.); Gothic *lauk-s*, Old Norse *lauk-r*, A.-Saxon *leác;* and Slav. *lukŭ*, Lith. *lúkai*. That the *k* remains unchanged shows the word to be not a congener, but a borrowed word. Whence came it, then, and in which direction did it travel? Grimm derives *lauk-r* from *lukan*, to lock; if so, it originated with the Germans, and was borrowed by the Slavs and Celts right and left; but this looks unlikely. As the primary meaning of "herb" is found chiefly in Celtic tongues, while the more limited sense of "leek, onion," is apparently the only one in the Slavic; and as the Celts were in civilization centuries ahead of their neighbours to the east, it seems most probable that it spread from Gaul to the Germans, and thence to the Slavs. The final *s* in the Celtic word might easily be taken by the Germans for a mere sign of the nominative, and be left out. In the time of Herodotus the Alazones and Callipides, near Olbia on the Black Sea, cultivated leeks or onions; but these half-Grecianized Scythians were not nearer in situation to the later Slavs than they soon became to the ap-

proaching Celts; mentally they were much farther. Among the Thracians the onion was an old-established and indispensable article, if we may trust the description, by an ancient writer, of a Thracian marriage custom. At the nuptials of Iphicrates with the daughter of King Kotys, the newly-wedded pair received, among other more costly gifts, a bowl of snow, a cellar full of millet, and a pot of onions twelve cubits deep. Afterwards, when the Slavs took possession of Thrace, they inherited the Thracian millet and onion. Among Teutonic nations in the north the *leek* seems to have possessed the same magic power attributed to it in Asia Minor and Greece. It was thrown into the drinking cup to protect the drinker from treachery. In the Lay of Sigurd-rifa, it is said: "Bless the filling of the cup, to protect thee from danger; and put leek in the drink. Then I know well that never for thee will the mead be mixed with perfidy." When Helgi was born, his father Sigmundr returned from battle wearing the noble leek, probably as a sign of victory: "The king himself left the tumult of battle to bring the noble leek to the young hero." The German *knoblauch*, garlic, is a corruption of *kloblauch*, which Grimm has explained as cloven-leek, from *klieben*, to split; and the Slav. *cesnŭkŭ*, from *cesati*, to comb, shows that he is right. The Saxon *gârleác*, Old Irish *gairleog*, Old Norse *geir-laukr*, means literally, spear-leek. The opposite of the *gar*-leek is expressed by the rustic Latin word *unio*, the single undivided onion, whence the French *oignon*, onion; the French *cive*, *civette*, chives, is only the Latin *cæpa*.

To this day onions and garlic are as much used and avoided in the south of Europe as they were in the time of Plautus and Aristophanes. Not a peasant in Italy neglects, where possible, to grow onions in his garden, and industriously eat them, while the higher classes make very scanty use of them. The Spaniards are still fonder of garlic than the Italians. We need scarcely remind our readers of the amusing scene in "Don Quixote," when that noble knight, seeing a peasant girl on the highroad, mistakes her for the beautiful Dulcinea of Toboso, but is rather puzzled by the strong smell of garlic which pervades the person of the supposed noble dame, and explains it as a trick of the magicians who have so

long persecuted him and now spoil the sweetest moment of his life. The consumption of onions at Byzantium was so enormous, even at the royal table, that it disgusted Liudprand, Bishop of Cremona, who was himself an Italian, and therefore accustomed to that vegetable. "The ruler of the Greeks," he says in his ambassadorial report of 968 A.D., "has long hair, and wears a train, wide sleeves, and a cap like a woman's; . . . he eats garlic, onions, and leeks, and swills bath-water" (that is, wine prepared with resin and chalk). Another time the same author writes: "He ordered me to come to dinner, the meats at which smelt strongly of garlic and onions, and were spoiled with oil and fish-brine."

At that very time an Oriental, the geographer, Ibn Hauqal, made the same complaint of a western town, the capital of Sicily. In his description of Palermo, he ascribes to the inhabitants every kind of public vice and folly; calls them stupid and impious, lukewarm to everything good, and inclined to everything bad; "the habit of eating *raw onions* morning and evening, which disturbs their brains and blunts their intellect, is at the root of their sad condition. Their appearance and conduct proves this; they rather drink stagnant than running water, are not afraid of stinking food, and are dirty in their persons; in the finest houses the fowls run about unhindered," etc. A commentator, Yâkût, explains this passage by the testimony of a medical book, according to which onions so deaden the brain and the senses that he who has eaten of them can no longer distinguish pure water from stagnant. May not the old belief in the magic power of the onion have had an influence on this opinion, the effect being only reversed?

CUMMIN. *MUSTARD.*

Two other spicy plants come also from the East—the cummin-plant, *cuminum*, *cyminum;* and mustard, *sinapis alba* and *nigra.* The Greek name for the first plant, *kyminon*, is a clear proof of this. The Hebrew word *kammon* must have had a similar sound in the other Semitic languages; from one of these came the Greek form, and passed into the Roman *cuminum;* from which again all the present European names of the plant are derived, though we Germans give it a new suffix in *kümmel*, and the Poles shorten it into *kmin*, Russian *tmin*. The road traversed by spicy plants is therefore the same as that observed in many other objects of culture, and is, so to speak, historically normal. Theophrastus reports that to make cummin thrive it was necessary to utter curses and blasphemies while sowing it. It might be possible to explain this superstition, but, as far as we can see, it would throw no new light on the history of the plant. Dioscorides says the Ethiopian cummin was the best, and that Hippocrates called it "the royal;" but no such epithet is to be found applied to the plant in the works of Hippocrates that we now possess, and perhaps the naturalist's memory played him false. Polyænus reports that Ethiopian cummin was used at the Persian court. The next best kind was the Egyptian, which, according to Dioscorides, also grew in Galatia and Cilicia in Asia Minor, and (by transplantation) in Tarentum; in fact, modern Greece still imports cummin from the harbours of the Levant, especially from Smyrna, and it is largely cultivated in Apulia in Italy. Among the Romans, says Pliny, the cummin of Carpetania, in the heart of Spain, was most valued, and after it that of Ethiopia, Africa, or even Egypt. Throughout antiquity cummin was valued as a mildly exciting and agreeable spice. A writer of

comedies mentions herbs, cummin, salt, water, and oil as the principal requisites in cooking fish; and Pliny says that cummin agreeably excites a flagging appetite. As salt was a symbol of friendship, "sharers of salt and cummin" meant intimate friends. It was an aspiring herb, *in sublime tendens*, and possessed the power of blanching a too-blooming cheek. Such seeds as the Roman cummin, the black cummin, *nigella sativa*, the coriander, and others, naturally played a less important part after pepper was discovered. Of these we single out the black cummin, because among the Romans it went by the Eastern name of *git*, *gith*, and thus bears on its face the impress of its origin. It is mentioned first by Plautus; later, by Columella and Pliny, as something quite common. In Greece it had quite a different name, and therefore cannot have reached Italy from that country. Therefore it could only have been introduced at such an early period by the Carthaginians from Africa. Now the Africans called the coriander *goid* (Diosc. iii. 64), which, pronounced as in modern Greek, would be *gîdh*, the same name that the Roman applied to *nigella sativa;* and we may add that *gad* is the Hebrew for coriander. It is indifferent whether this *gad* was originally Semitic or borrowed; even the distinctness of the two plants presents no difficulty, considering the inexactness and fickleness of the popular speech of commerce. The cummin really indigenous to Central Europe, *carum carvi*, is largely used to this day; both on bread, and in cheese, cabbage, etc., but above all as "double-cummin" in brandy, it is much (often too much) relished by the Hyperboreans.

Mustard is equally mentioned by the Attic comic dramatists as a well-known biting substance, exciting tears and grimaces, but excellently calculated to give a relish to insipid meats. The Athenians called it *nâpy;* while the Hellenistic name was *sināpi*, or *sināpy*, whence the Latin *sinapi*, or *sinapis*. The first form—which is also seen in the extension, *napeion*—is remarkably like the Latin *nāpus* (*navew*, turnip), to which the mustard-plant bears some resemblance, and the name of the one may have been given to the other. The elder Greek writers all use *nāpy* for mustard; it is only in the Macedonian time, and with the Alexandrian poet Nicander, asw *sināpi* became common, and then the older name went uot

of use. In Italy the word *sinapis*, or *sinapi*, was exclusively used; while *napus* meant only the turnip. It seems improbable that this similarity of sound can be accidental, but there is nothing to show in what relation the two forms stood to each other. The double form might have its foundation in the laws of the language from which the word was derived; but what language was that? At Athens the mustard of Cyprus was considered the best. Benfey conjectures that the word was originally Sanskrit, but altered first by the Persians, and then by the Greeks into *sinapi*. The analogy of some Egyptian words of double form (*sili* or *seselis*, *sari* or *sisaron*, etc.) would rather lead us to guess an Egyptian origin for *nâpy* and *sinapi*. The Italian *mostarda*, French *moutarde*, etc., came from *mustum*, the must with which the mustard was mixed; but the German word *senf*, like the German names for vinegar, onion, cummin, oil, salad, lettuce, endive, chicory, cress, celery, parsley, fennel, anise, and many others, came from Italy.

LENTILS AND PEAS.

THE first cultivation of the *pulses* was very near in point of time to that of the flour-yielding grasses. The pulses were almost equal to the latter in value, either as affording nourishment for men and animals, or seed for fallow ground; and, like them, the more valuable because the seeds can be kept a long time and carried far. We have already, in passing (note 17), spoken of the Bean as a very ancient article of food; and Lentils and Peas, in the countries where they grew wild, must have been very early noticed by the shepherds on account of their edible seeds. From that point to the artificial extension of the plants was but a step. But where did they grow wild? As naturalists hitherto have failed to tell us anything certain about the original home and first cultivation of these plants, we are again obliged to have recourse to the ancient testimony preserved in language, and handed down till the dawn of history. But in the present case we find, even there, very indecisive answers to our questions; for, first, the names of the plants under examination are of such a general character that they may be very old, while the seed or grain of which they speak may be very young; secondly, while we rejoice to find a corresponding individual nomenclature among different nations, a doubt arises whether the agriculture of a much later age may not have carried the word abroad; and, thirdly, in the latter case, which would still be instructive, it is often doubtful whether the transmission was in this or in that direction—for instance, from north to south, or the contrary. The only thing we can clearly perceive is that the Lentil was a product of pre-Indo-Germanic culture, and came to the European nations from the south-east; while the Pea—we mean all the species of that plant—belongs to

Central Asia, and thence found its way past the Pontus into Europe.

The fact that the lentil grew in Egypt—particularly in the half-Semitic borderland of Pelusium and elsewhere in the Delta of the Nile, where stood Phacussa, or Phacussæ, the *lentil-town*—is sufficiently proved. The tiny fragments of hewn stone which Strabo saw lying in heaps at the foot of the pyramids in the shape of lentils, were said by the people to be the petrified remains of the meals eaten by the builders—which at least proves that those most ancient of masons were thought of as lentil-eaters. Biblical history shows us that the Israelites were fond of lentils, for a dish of which the eldest son of the patriarch sold his birthright. David, when in the desert, is provided by his friends with lentils among other things; (2 Sam. xvii. 28) they "brought beds and basins, and earthenware vessels, and wheat, and barley, and flour, and parched corn, and beans, and *lentils*, and parched pulse." The old Hebrew name for lentils, *adashim*, is still used by the Arabs, and has been adopted by the Persians. The Greeks, those pupils of the Semites, must have soon become acquainted with the fruit. It is true that Homer never mentions it; but eating lentils was a custom of the common people at Athens in the middle of the fifth century B.C., and Aristophanes could write, "Now that he is rich he will no longer eat lentils; formerly, when he was poor, he ate what he could get." "No lentils, pray!" cries one of Pherecrates' dramatic personages, "for the breath of one who eats lentils smells!" The Greeks called the lentil-bean and the dish made of it *phakê*, and the plant and its seed *phakos*, an obscure word that has no analogy with any other, and never reached Italy. The Romans, who served lentils and salt at funeral banquets, called the former *lens*, *lentis*, a word not derived from any Greek source. Nor can we guess whence it came; even the Latin gives no hint. In the usual way the lentil migrated from Italy across the Alps to Germany, and to the Lithuanians and Slavs. The German *linsi*, *linse*, the Lithuanian *lenszis*, the Slavic *lesta*, etc., are simply the Latin *lens*, *lentis*, modified to suit the barbarian tongue. The Slavs have also another expression, *socivo*, Russian *cecevica*, Polish *soczevica*, etc.; with these compare

the Old Prussian *licutkekers* (lentils), and *keckers* (peas). Like the last, the assibilated Slavic forms are only an echo of the Latin *cicer*, German *kicher*, Italian *cece*, and French *chiche.*

Among the different names for the *Pea* and its varieties the most interesting, because one of the oldest, and still existing, is the Greek *ĕrĕbinthos.* It occurs in Homer side by side with the bean. Helenus, the son of Priam, has shot an arrow at Menelaus, which rebounds from his armour "as on some wide threshing-floor the dark beans and *erebinths* leap from the winnower's fan in a whistling wind." The passage does not inform us what kind of pea is meant, whether the chick-pea, the flat, the common, or what. Theophrastus, many centuries after, uses *ĕrĕbinthos* in the sense of chick-pea, for he speaks of its pod as being round. Stript of the suffix *inth*, it seems the same as the other word for pea, *ŏrŏbos;* and the oldest form of the word seems to have been *vorvos*, and to have come from Asia Minor. To Asia Minor it could not have come from the tropical palm-lands towards India, nor from Syria or Egypt, for none of these had the pea; it must therefore have come from the region of the Pontus and Caucasus. When the Greeks brought the culture of the pea into Italy, the Latins called it *ervum*, from which was derived the Anglo-Saxon *earfe;* but, curiously, the other Teutonic tongues show the word in an elongated form—Low German, *ervet;* High German, *arawîz*, now *erbse.* Did they develop this prolongation independently? If we look at the matter more closely, we may find that not the Latin *ervum*, but the fuller Greek form ereb-*inth*, was the real source of araw-*îz*, and the rest; and that the time when peas became known to the Germans was that during which the Goths and other German nations came into direct contact with the Greek language, or with nations of half-Grecian culture on the lower Danube.

Besides *ŏrŏbos* and *ĕrĕbinthos*, the Greeks had another very old name for the common pea, *pisos*, *pison*, which all etymologists connect with the root to which belongs the Latin *pinsere*, *pisere*, to pound, to stamp; but this gives us no hint as to the antiquity of the fruit. By this name the pea is not described as something *fit* to pound or grind, but as the sort of grains or crumbs *produced*

by bruising or crushing, and may have been first applied to gravel, shingle, hail, etc.—Lithuanian *péska* (sand), Old Slavic *pêsŭkŭ* (sand, pebble), Russian *pesók*, Polish *piasek*, and so on. So a long existing word was applied to the pea, and has stuck to it. The example of the Greeks was followed by the Latins with their *pisum;* it held its ground in the Romance languages, and even passed to the Celts and the English (who, mistaking their *peas* for a plural, have dropt the *s*), but not to the Germans; perhaps an additional hint that the latter had formed their own *ervet* much earlier, before the beginning of mediæval influences from the south and west.

Like onions and lentils at Athens, onions and chick-peas formed the frugal meal of the poorer classes in Italy; so that during the festival of the Floralia, beans and chick-peas were scattered among the people, who laughingly picked them up. Every one knows that Lentulus, Fabius, and Piso were named after the corresponding seeds, as well as Cicero from the chick-pea or *cicer*. We mention this to show that such popular nick-names could only be taken from things long known among the people. Many names both old and new show that the different nations applied the meaning of *pebbles* or *hailstones* to peas, either from an innate similarity of fancy, or following the example of the people by whom the plant was first introduced.

As the *Vetch* was only cultivated in the later times, as green fodder, and food for pigeons, fowls, etc., the transition from the Greek *bikos*, *bikion*, to the Latin *vicia*, and from that to the German *wicke*, etc., is quite normal.

LAUREL. *MYRTLE.*

(LAURUS NOBILIS.) (MYRTUS COMMUNIS.)

AT a very early period were introduced the myrtle and the laurel—the first dedicated to Aphrodite, the second to Apollo—and are often mentioned together, not only in Mignon's Song, but by Virgil, Horace, etc. Both plants accompanied the migrations of various religions from place to place in Greece, and both were planted around their respective sanctuaries. The *Myrtle*, called so from its balsamic odour, came from the very region in which the Oriental Goddess of Nature, Aphrodite, had her origin. In the city of Temnos in Lydia, on the left bank of the R. Hermos, a figure of Aphrodite carved from living myrtle had been already made by Pelops, the son of Tantalus, to obtain the favour of the goddess in his wooing of Hippodamia. In Cyprus, the seat of the goddess Astarte, Myrrha, the daughter of the priest-king Cinyras, was changed into a myrtle to protect her from the persecution of her incestuous father; and from that tree, in due time, Adonis was born. The same legend is related by Panyasis, with the difference that he calls the father Theias, an Assyrian (that is, Syrian) king, and that the daughter is changed into a myrrh-tree, *smyrna*, the Arabian myrtle. At the festival of the Hellotia, held at Crete and Corinth in honour of the Moon-goddess Europa, an enormous wreath of myrtle was carried about, called *Hellotis* after one of the names of the goddess herself. Both Crete and Corinth were ancient seats of Semitic worship. The names of the Amazons who were priestesses of the Moon-goddess in Asia Minor—*i.e.*, Myrina, whose tomb is mentioned in the Iliad, and Smyrna, after whom the town of that name was called—point

to the use of incense, anointing and crowning with myrrh and myrtle, connected with the worship of the goddess. When the three ancient towns opposite the Isle of Cythera—Sidē, called after the daughter of Danaus; Etis and Aphrodisias, both founded by Æneas, son of Aphrodite—united in founding a new city, Boiai (Bœæ), they were shown the proper place by a hare, which hid itself in a myrtle-bush; the myrtle was used to make an idol, which still existed at the time of Pausanias under the name of Artemis Soteira. Polycharmus of Naucratis, in his work on Aphrodite, relates that, in the twenty-third Olympiad, Herostratus purchased a small figure of Aphrodite at Paphos in Cyprus, and then set sail for Naucratis. Not far from the Egyptian coast he was overtaken by a storm, during which the crew prayed to the figure of Aphrodite for help. Suddenly the ship was covered with green myrtle-branches and filled with a sweet scent, the sun shone again, and the voyagers ran safely into their wished-for haven. Herostratus placed the figure and the myrtle-branches in the temple of Aphrodite, and gave a banquet in the sanctuary itself, at which the guests wore wreaths of myrtles. Such wreaths were afterwards called Naucratic. As this event happened before the founding of the Greek Naucratis, the emporium of the Delta, there must have been an older seaport there at which Aphrodite was worshipped; and indeed the coast of Lower Egypt was connected from the earliest times with Syria, Phœnicia, and Cyprus, interchanging with those lands not only merchandise, but religious customs and ideas.

The barbaric conception of Aphrodite as a power of nature to be worshipped with licentious rites was gradually transformed, among the Greeks, into a personification of feminine beauty and of love; and the myrtle, beloved on account of its sweet scent, evergreen leaves, white blossoms, and aromatic berries, was everywhere to be seen near temples, in gardens, and soon even growing freely on the rocky coasts of Greece, and was abundantly used for wreaths and decorations, even in rites with which the goddess was not directly concerned. Only from the worship of the austere goddess Hera, and of Artemis, was the myrtle banished; and in the rare cases where we do find the bridal plant connected with

chaste Artemis, it is probable that the transformation of the armed Ashera of Ascalon, the goddess of Cythera, into a Grecian form had only taken another direction.

The *Laurel*, too, on account of its pungent aromatic scent and taste, and its evergreen leaves and berries, was very early considered a sacred tree. The strong scent exhaled by its boughs dispelled mould and decay; and that god who, from a personification of the plague-producing and also plague-dispelling rays of the sun, had gradually changed into the earnest god of expiation for moral sickness and pollution—he, Apollo, son of Leto, Apollo Kątharsios (the cleanser), chose this tree as the symbol and magical means of the purification accomplished by his power.

The laurel is mentioned in the legend of Orestes, the matricide who was pursued by the Furies, and afterward healed from guilt and madness by Apollo. At Trœzen no citizen would receive the murderer into his house, so Orestes was cleansed from blood-guiltiness in a separate building named the Tent of Orestes; and when the *katharsia* had been buried in the ground, there sprang out of them a laurel-tree that still stood before the Tent in the time of Pausanias. Apollo himself, after killing the Python, had need of expiation for the blood shed: at the command of Jupiter, he hurried to a Thessalian temple in the vale of Tempe, crowned himself with a laurel branch from the tree standing near the altar, took another branch in his hand, and walked along the Pythian highway into Delphi as the prince of oracles. This mythic event was repeated every eight years by the people of Delphi in a peculiar religious representation. A noble Delphian youth marched with the band of Daphnephori (laurel-bearers) to the altar in the vale of Tempe, broke the bough of expiation from the tree, and, following the sacred route from one shrine of Apollo to the other pointed out by the legend, returned to the temple at Delphi. As the sanctuaries of Apollo became more numerous, Greece became more thickly covered with groves of laurel. The tree having been dedicated to the god, it shared in all his sacred preferences and performances. A laurel staff, *aisakos*, imparted the power of divination to seers and prophets; the oracles of Apollo were given forth from a laurel; and in the most holy place,

laurel branches twined round and upon the tripod from which the Pythia prophesied. Manto, the daughter of the seer Tiresias, is also called Daphne, or the laurel; when the Epigoni took Thebes, they dedicated this Daphne to the temple at Delphi, and from that time she prophesied in that city. Homer borrowed many of her sayings and introduced them into his epics. And as poets are also prophets, and Apollo, prince of the Muses, fills them, a branch and crown of laurel became also the badge of the minstrel, the magic means of poetic inspiration. Thus Hesiod boasts that the Muses put a laurel branch from Helicon into his hand, that he might reveal what was hidden, and prophesy the future with the voice of a god. Laurel branches were carried in all processions, sacrifices, games and charms connected with the worship of Apollo. If the tree flourished in an unusual manner in any particular spot, that spot was soon singled out by legend as the birthplace of Daphne. Thus the Arcadians related that Daphne was the daughter of their river Ladon and the Earth, and was changed into a laurel-tree; but according to Python the laurel was brought from Thessaly; the victor's crown in the Pythian games was at first fetched from Tempe, or consisted of oak leaves, there being as yet no laurels in that place. This would seem to prove that the laurel was a Thessalian plant, and at present it cannot be traced further.

Turning to Italy, we find that originally both Aphrodite and Apollo were strangers to that country. Both these deities were introduced by the Greek colonists, who also brought the myrtle and the laurel into the western peninsula. The representations by the Campanian Greeks of Æneas's wanderings and his settlement in Italy, the fame and influence of the temple of Venus Urania at Eryx in Sicily, founded by the Phœnicians and adopted by the Greeks, and the new institutions proceeding thence, could not fail to spread the goddess's favourite tree throughout the west. In that part of the world the myrtle is said to have first appeared in the Isle of Circe—the promontory south of the Pontine marshes—on the grave of Elpenor, Ulysses' youthful companion, who fell from the roof drunk with wine and sleep. Apollo was also the object of ardent veneration in the cities of Magna Græcia, and

the founders of temples did not neglect to plant his favourite tree. Italian legend made Rhegium the scene of Orestes being cleansed from blood-guiltiness (as Greek legends made Athens and Trœzen); there he founded a temple of Apollo, from the sacred groves of which the Rhegians used to take laurel boughs with them on their pilgrimages to Delphi. The coins of the Brettians, of Nola, etc., are stamped with a head of Apollo crowned with laurel. A temple of Apollo stood in the Acropolis of Cumæ, the home of the Sibyl. Thence Grecian civilization poured, not in a slender brook, but in a full stream, as Cicero says, over the barbarians, inculcating the worship of the purest of Grecian gods and his attributes. The laurel soon found a place in the numerous purifying and atoning rites of the Latin-Sabine religion; in the service of the Lares; at celebrations of the *Palilia* (in honour of the goddess Pales, who was sacrificed to with cakes and milk), and the *Poplifugia* (anniversary of the flight of the Romans from the Etruscans); and at triumphal processions of victorious armies and generals—for the laurel *cleansed* men from the blood shed in battle, its name being derived from that quality (note 50), while the myrtle, the emblem of reconciliation, adorned him who ended a campaign without striking a blow. Thus about 300 B.C. Theophrastus could say that *the plain of Latium was full of laurel and myrtle trees*, and the hills were clothed with firs and pines. A century and a half later we find three kinds of laurel mentioned by Cato —the *laurus Cypria*, *Delphica*, and *silvatica*, of which names the first two explain themselves, but the last probably meant the *Viburnum Tinus*, just as the wild myrtle mentioned by Dioscorides is nothing but the butcher's-broom or *ruscus aculeatus*. The analogy of Corsica, in which within historic times the primitive wilderness still existed, and no kind of laurel grew, proves that the laurel was once not indigenous to Italy, for a continent always sees its own former state mirrored in the neighbouring islands. In Italy the laurel has always been a tree of the temple and garden, and the northern pilgrim who dreams of Hesperian laurel-woods, will be greatly disappointed. In Greece, too, the *laurus nobilis* in a wild state is generally but a large shrub; though under favourable circumstances it will grow to a stately tree. Herr Fraas found it

rare in Southern Greece, and in the form of groves only in the north, especially in Phthiotic Thessaly, "that is, in the neighbourhood of monasteries, *which make a point of cultivating them.*" In Hesiod's time the tree cannot have been uncommon on Mount Helicon in Bœotia, for that poet advises people to make their plough-shafts of laurel or elm wood, neither being liable to become worm-eaten. The cave of the Cyclop in the Odyssey is hidden by laurels:

> "When to the utmost verge of land we drew,
> Fast by the sea a lonely cave we view,
> High, and with darkening laurels covered o'er."

The tree, as we suppose, was brought to Europe from Asia Minor, probably in connexion with a purifying religious rite, whether of migrating Thracians or Carians or Cretans, etc. Legend says that the seer Branchus, the mythic founder of the Branchid-oracle near Miletus (which the first Ionian settlers found already established among the Carians), sprinkled and purified the Milesians with laurel-branches during a plague.

The mention of the laurel in the legend of the Argonauts brings us to the Thracian Bosphorus. There, in prehistoric times, dwelt the mythic Bebrycians, whose king, Amykos, son of Poseidon, was slain in a boxing-match with Polydeukes, as Apollonius Rhodius circumstantially relates at the beginning of the second book of the Argonautica. The victor and his followers crowned themselves with laurel from a tree growing on the shore, to which they had fastened their ship, and sang their hymn accompanied by Orpheus's lyre. Two ancient authors mention the tree, one saying that a tall laurel-tree really grew near a place still inhabited and called Amykos, and the other that there was a temple of Amykos with a laurel-tree, and that he who broke a branch of it immediately began to curse. Pliny says that a laurel grew on the grave of Amykos, and was called the "unreasonable," because if a branch of it were brought on board a ship there immediately ensued a quarrel until it was thrown away. Here, too, the laurel is the symbol of expiation for bloodshed, but the idea that it led to strife and was called *insana* is owing to its having grown on the grave or near the temple of the bragging, quarrelsome

giant. Attempts had been made, as Theophrastus relates, to plant myrtles and laurels farther north, near Panticapæum (Kertch in the Crimea), with a view to religious ceremonies; but they did not succeed, evidently owing to the rigour of the Scythian winter. Pliny repeats this story, but curiously connects it with King Mithridates. If Pliny was not mistaken in dragging in Mithridates (note 51), if the planting of those trees really had to do with the religion of the Pontic king, who was of Persian race; we already know from Herodotus and Strabo that the Persians made use of the laurel and myrtle in certain sacred ceremonies, and must therefore have possessed those trees. Both the coast-loving myrtle (*amantes litora myrtos*) and the laurel are products of a mild climate free from extremes. The myrtle is in this respect more delicate than the laurel. The first, if we are not mistaken, spread from the south-east along the rocky coasts of the Mediterranean. The second—flourishing not only in Cilicia, where it ascends almost to the celebrated Cilician Gates, and in Lycia, and up the coast of Asia Minor as far as Troas, but also on the southern shores of the Propontis and Euxine right away to Georgia, where it ceases—was first introduced into the northern part of the Greek peninsula, and then spread to the south and west; though it never throve so well in a free condition in Europe as it does in Western Asia. either as regards the number of trees or their beauty.

THE BOX-TREE.

BOTANISTS will unhesitatingly affirm that the evergreen *box-tree*, the diminutive image of the myrtle, belongs by nature to the flora of Southern Europe; but the historian is not so sure of that. At the first glance we are struck by the fact that its Latin name *buxus* (or in the older and popular form *buxum*) is borrowed from the Greek *pyxos*—for no one will maintain that the two are simply congeners; and we are surprised that a shrub or tree indigenous to Italy should bear a foreign name. From the earliest times the wood of the box-tree was highly valued for its hard close grain, its weight, its resistance to decay, and its faultless smoothness when polished. It was the ebony of the north and west; it was used for tools of all kinds, for guitars and flutes, for jewel-boxes, tables, doorposts, images of gods; and to this day it is indispensable to the art of wood-engraving: reasons sufficient for a diligent propagation of the little tree, which, moreover, as Theophrastus says, is "one of the good growers;" and which therefore, having been introduced by man into various countries in an obscure period of which we have no record, was easily mistaken in historic times for a native of those countries. Now if Asia was its native home, from what part of that continent did it commence its migrations? In that wonderful section of Theophrastus' history of plants, in which he sketches a picture of the geography of plants, extending far beyond the immense empire of Alexander the Great—I mean the first few chapters of the fourth book—the author reckons the box among the plants of *cold* climates; and in the preceding chapter he says that the box and the lime were difficult to rear in the gardens of Babylon on account of the too great mildness of the climate. He says the same thing of the box and

the lime in countries where the date-palm flourishes. From this it would appear that the box-tree was not indigenous to the Semitic regions, and therefore the tree mentioned in the Old Testament could not be the box, though translated so in Isaiah and Ezekiel: "I will set in the desert the fir-tree and the pine, and the *box-tree* together;" and: "The glory of Lebanon shall come unto thee, the fir-tree, the pine-tree, and the *box* together." But on the mountains of Pontic Asia Minor the tree flourished exceedingly, and attained a height and thickness found nowhere in Greece. The Cytorus mountains near Amastris in Paphlagonia, which approach very near the Black Sea, were celebrated for their box-tree forests; and as men spoke of "carrying owls to Athens," or "fish to the Hellespont," (that is, coals to Newcastle), there was also a proverb that ran, "Thou hast brought box-trees to the Cytorus." To these Pliny adds the mountains of Berecyntus in Phrygia. Now the Paphlagonians being, as we learn from Homer, allies of the Trojans, and mules having originated among the Henetians there, we have an explanation of the box-wood yoke of Priam's mule-drawn chariot:

"Box was the yoke, embossed with costly pains."—ILIAD.

In the Middle Ages, Marco Polo writes, "In the province of Georgia all the woods consist of box-trees;" and his latest editor adds, "The wood of the box-tree was so plentiful in the Abkhasian forests, and formed such an important article of Genoese commerce, that the Bay of Bambor, north-west of Suchum Kaleh, through which that commerce passed, received the name of *Chao de Bux*, or, as we might say Box Bay."

The box-tree already grew on the Macedonian Olympus at the date of Theophrastus, but it was of a low, degenerate, knotty, and therefore useless kind. In the more southern parts of Greece, in what is now the modern kingdom, the *buxus sempervirens* is not common; but it was reported to Theophrastus of the western parts, and especially of the Isle of Kyrnos (Corsica), that the finest, tallest, and thickest of all box-trees grew there, and that in consequence the honey obtained in that region had a disagreeable smell. Although the Greeks very early colonized part of the coasts

of Italy, Gaul, and Spain, they remained almost ignorant of the interior of those countries until a very late period. Even in Theophrastus' day there hangs over those lands a veil, through which the Greek writers only catch momentary glimpses. Corsica in particular was then a half-mythic land; and according to the primitive notion of an identity between the extreme west and extreme east, it would be quite according to rule that any products of Pontus—in this case the valuable box-tree—should be transferred to that island. For the honey of Pontus also derived its disagreeable smell from the box-tree; and so late an author as Diodorus (or rather the Sicilian historian Timæus, whom he quotes) speaks of Corsica as a kind of fairyland, a land inhabited by men virtuous and upright, and of simple pastoral habits. Now whether fancy in the same way created the box-trees that grew in the thick and awful forests of the island, or whether the kind called *buxus balearica*, now peculiar to the Balearic Isles, was formerly found in Corsica—in any case, the connexion between the box-tree and bitter honey in that island is a fable. But the name of the town *Pyxous*, Latin *Buxentum*, proves at least that the box-tree grew on the Italian coast, near the modern town of Policastro in Calabria, in the fifth century B.C., three or four centuries after the first arrival of the Greeks in those parts; for that ancient town, founded in 467 B.C. by Mikythos, tyrant of Messina, was undoubtedly named after the box-trees found in the neighbourhood.

Among the later Romans the living shrub served, as now with us, for the borders of garden-paths and beds, and was clipt into various forms of animals or even letters. Very instructive in this connexion is the younger Pliny's description of his villa at Tusculum. A plant so generally useful, a species of wood so valuable, must surely, if slowly, have been propagated in suitable localities. During the eighteen centuries since the time of Pliny, who mentions three kinds of box-tree, the plant has been fully acclimatized on the coasts of France, England, and even Ireland; and as it was certainly human traffic that brought it to *these* places, it is not unreasonable to suppose that in ancient times migrations from Cappadocia were the occasion of the tree being brought to

the Mediterranean countries. It is not surprising that the name of the tree in all European languages is derived from the Latin; it is a more interesting fact that, since the Middle Ages, all objects that were originally made of box-wood took their names from the tree. Thus in German, *büchse*, in all its meanings, even that of a fire-arm; French, *boîte*, and the verb *boîter*, to limp, that is, to put or get out of the boîte (socket of a joint); *boisseau*, a bushel; *boussole*, the compass, Span. *bruxula; buisson*, a bush, Ital. *buscione; buste*, Ital. *busto*, a bust; Slav. *pushĭka*, *pushka*, a cannon; *pushkarĭ*, cannoneer; Magyar *puska*, and many others (note 52).

THE POMEGRANATE-TREE.

(PUNICA GRANATUM.)

RELIGIOUS intercourse first brought the beautiful pomegranate-tree to Europe in ancient times. Its scarlet blossoms, its glittering foliage, its rosy-cheeked and kernelled fruit, must from the first have strongly excited the mystically disposed imagination of the nations of Western Asia. Two passages already quoted from the Odyssey mention pomegranates, *roiai* (rœæ), which name alone would prove that the plant was derived from the Semitic sphere of languages and cultivation (note 53). The tree held so prominent a place in Syro-Phœnician worship, that the name of its fruit, *Rimmon*, is the same as that of the Sun-god, Hadad-Rimmon. According to the legend, Aphrodite herself had planted the tree in Cyprus; it was dedicated to Adonis, and is intimately mixed up with the divine myth of the Phrygians. No doubt the "apple" that Trojan Paris adjudged to the national goddess Aphrodite, in her struggle with the intruding worships of Athena and Hera, was first imagined as a pomegranate. The tree and the fruit have another name in Greek, *sidē*, which probably came from Asia Minor, and was a Carian or Phrygian word. In literature the word appears first in a verse of Empedocles (middle of the fifth century B.C.) quoted by Plutarch. The writings of Hippocrates contain mention of the localities and dialects in which the word was common. The Bœotians called the fruit *sidē*, the Athenians *roa*. Athenæus relates, that when the Bœotians and Athenians quarrelled about a piece of borderland called *Sidæ*, Epaminondas suddenly held up a pomegranate and asked, "What do you call that?" When the Athenians answered

"roa," Epaminondas cried, "But we call it *sidē*," and he won his cause. And in much older times there were places, both in Greece and Asia Minor, whose names were derived from the word *sidē*. On the coast of Laconia was a town Sidē, named after a daughter of Danaus, and politically connected with the two places Etis and Aphrodisias mentioned before under the article "Myrtle;" in Troas itself Strabo names a city Sidēnē on the Granicus; Stephen of Byzantium mentions another Sidēnē in Lycia; Sidous, a village near Corinth or a seaport in Megaris, had especially fine *mêla* (Lat. *māla*), which, from the name of the place may be understood as pomegranates; Stephen of Byzantium knows of villages with the same name on the coast of Asia Minor near Klazomenæ and Erythræ; a town Sidoussa in Ionia is mentioned by Hecatæus in his voyage round Asia, and is also spoken of later. Sidē in Pamphylia, on whose coins is seen a pomegranate, lies indeed on the southern and more Syrian coast, but it was founded by Æolians from Kymē. Finally, far within Pontus, in the beautiful district of Sidēnē, stood the lofty coast-town of Sidē; whilst an older form of the name Sibdē brings us back to Caria.

As in Asia, so in Greece, the tree and its fruit served in the corresponding cults as the symbol of fructification and procreation, and again of death and destruction. There is a Phrygian colouring in the Theban legend which relates that a pomegranate-tree planted by the Furies grew on the grave of Eteocles, from the fruit of which, if plucked, blood flowed; and in that other legend, according to which a pomegranate with fruit as red as blood grew on the tomb of Menoikeus, who, obeying the Delphic oracle, had killed himself on the approach of Polynices. On the figured chest of Cypselus in Hera's temple at Olympia, which was made in the first century of the Olympiads, and was still found in its place by Pausanias, the god Dionysus lay in a cave surrounded by vines, apple-trees, and pomegranate-trees. The statue of Hera by Polycletus, in her temple situated between Argos and Mycene, held in one hand the sceptre with the cuckoo, and in the other a pomegranate. Pausanias, describing this statue, refuses to explain the latter symbol, saying that it cannot be expressed. But it signified the earth-goddess, fructified by heaven and bear-

ing fruit, as the cuckoo signified the rainy spring-time during which the fructification takes place. The pomegranate is a significant feature in the myth of Pluto and Proserpine; the Homeric Hymn to Demeter tells how Persephone was forced in the under world to taste the pip of a pomegranate, that is, to unite sexually with Aïdoneus, and thereby become subject to him. As the pomegranate everywhere mystically symbolized the natural life, it could not be dedicated to Pallas Athena the intellectual goddess of chastity, the goddess of the state and city of Athens. It is therefore all the more striking when we hear that in the right hand of the unwinged statue of Athena Nikē on the ascent of the Acropolis at Athens was a pomegranate, while the left hand held a helmet. But Cimon had erected the statue as a monument of his double victory on the Eurymedon, in witness of which he had caused the statue to be imitated from the Pallas of Sidē, a town close to the Eurymedon, by Kalamis. So that the goddess was a stranger, and her pomegranate was a symbol of the Asiatic region whence she had come, and where the Asiatics had just been defeated.

No doubt the symbol of the pomegranate was also used in the worship of Hera in the Achæan cities of *Italy*, and the tree itself cultivated near temples and in gardens; this is also confirmed by what is related of the statue of Milo of Kroton at Olympia; the Magna-Græcian athlete who lived about 520 B.C. was represented as a priest of Hera, bearing in his left hand a pomegranate. The intercourse of the Romans with the Greeks of Campania, who brought the Erycinian Aphrodite and the Sibylline books to Rome, must also have imparted a knowledge of that frequent symbol the pomegranate, and of the tree on which it grew. And, in fact, we find a pomegranate mentioned in one of the oldest portions of the Roman ritual; the wife of the *Flamen Dialis*, who in manner and dress was an image of the Roman matron of the ancient time, wore on her head a branch of pomegranate, the ends of which were tied together with a thread of white wool, evidently as a sign of wedded fecundity; and her husband's head was adorned at the top with an olive branch. Here the pomegranate cannot be of younger date than the olive, which, as we have seen,

was introduced into Italy about the time of the Tarquins. "Pomegranates imitated in clay, together with other votive offerings, have been found in quantities in the ancient tombs of South Italy, especially at Nola," says Gerhard. It is therefore very strange that the two Greek names of the fruit are not to be found in Italy, but, instead of them, the generic term *mālum* with a defining adjective *Punicum* or *granatum*. The first adjective is very likely due to the fact that in the Carthaginian colonies, and then in Africa itself, the Romans found the reddest, sweetest, and juiciest fruit. On African soil, whither the tree had been transplanted direct from its native home Canaan, the best kinds flourished, and there is no doubt that this product of Africa became celebrated among the Romans. Martial writes, on sending a basket of fruit to a friend: "Here there are no pipless (*i.e.*, soft-pipped) African pomegranates, but homegrown fruit from my garden." And Rufus Festus Avienus, who lived towards the close of the fourth century B.C., and had been to Africa, begs his friend, in a little poem, to send him pomegranates from that country; "Not that my own garden," he adds, "is without that fruit, but it is hard and sour, and not to be compared with the nectar produced by the warm sun of Africa."

In the paradises of the Vandals in Africa, spoken of by Luxorius, the beautiful tree could not fail to be cultivated, as it was afterwards by the Arabs, the lovers of flowers and refreshing fruit-juices. The Portuguese to this day use the Arab name for the pomegranate, namely *roma*, *romeira*; and from this Arab word is derived the Italian and French name for the steelyard, namely *romano*, *romaine*, because the Arab counter-balance had the form of a pomegranate. The city of Granada, founded by the Moors in the tenth century, is said to have been named after the pomegranate, the figure of which was adopted in the arms of the city, and still adorns all the streets and public buildings.

In Italy the tree is commonly mentioned by ancient authors, from Cato downwards; Pliny in the Imperial period could enumerate many kinds used in various ways. There are wild pomegranate trees—that is, trees that have gone wild—both in modern Greece and Italy, in the form of thorny hedges with

uneatable fruit; in these countries even the cultivated kinds do not grow so large nor produce fruit of such a rich flavour as the pomegranates for which Asia is celebrated. In Italy the beautiful red fruit is placed on the table more to please the eye than to be eaten. And the lemon has robbed the pomegranate of the place it once held in the estimation of the ancients. But even now, after the lapse of so many centuries, popular fancy in Greece still connects the pomegranate with the idea of abundance and incalculable number (note 54), and a present of the scarlet blossom is a symbol of the most ardent love. The fact that the word *punicum* has not been preserved in any of the modern Latin languages, is a proof that it never became really popular.

THE QUINCE.

(PYRUS CYDONIA. CYDONIA VULGARIS.)

UNDER the general name of apples the ancients included not only the pomegranate but the *quince;* which is our reason for speaking of that fruit next. The "golden apples" of the Hesperides and of Atalanta were idealized quinces; and the apple dedicated to Venus and used as a bridal gift, and in all kinds of girls' games and love games, was also no other than the quince. Its colour, like that of the pomegranate, made a lively impression on the natural man when first seen. The quince could not be eaten raw, but when preserved in wine, must, oil, and especially honey, it gave a very fine aroma and taste to those materials. Its Greek name of *Cydonian apple*, throws a welcome light on the history of the tree. It proves that the quince first came to the Greeks from Crete, the land of the Cydonians, who dwelt on the north-western coast of that island near the river Jardanus, and—whether of Semitic race or not—were some of the oldest and half-mythic inhabitants. Their city, Cydonia, was the *mater urbium* of the country, and the fact of the quince being named after it assigns a very early date both to its introduction and to its extension to the Greeks. The first written mention of the tree is to be found in Alkman (middle of seventh century B.C.). Soon after, six hundred years before Christ, it is named by the Siculian poet Stesichorus. About that time Solon decreed that a bride, before entering the bridal chamber, should eat a Cydonian apple, evidently to consecrate herself to the service of Aphrodite; the decree being a mere confirmation of an old Attic custom. The tree must also have been cultivated by the Italiote Greeks about this time, for

Ibycus of Rhegium, a born Italiote (middle of sixth century B.C.), speaks of Cydonian apple-trees in well-watered gardens. The golden apples could not fail to charm the surrounding barbarians. The early existence of the fruit in Italy is proved not only by the Latinizing of its name in the people's mouth, *mala cotonea*, instead of *Cydonia*, but also by a passage in Propertius, where that poet compares the simplicity of former times with later luxury: "Once," he says, "the young people gave each other quinces shaken down from the tree, and basketfuls of blackberries, but now it must be gillyflowers and lustrous lilies," etc. Columella and Pliny mention several kinds of quinces, among them the *malum strutheum*, literally sparrow-apple, which was already mentioned by Cato, and was therefore older than the third Punic war. In Pliny's time quinces were placed in rooms for the sake of their agreeable perfume, just as they are now; and the ancients made a sweet confection from them like the modern Italian *cotognata*. The *melimela*, literally honey-apples, mentioned by Varro, Horace, and Martial, are explained by modern commentators as meaning especially sweet apples; but that they were a variety of quince suitable for cooking with must, and afterwards in honey, is proved not only by the Schol. Cruq., but by the Spanish *membrillo* and Portuguese *marmelo*, quince-jelly; from the Portuguese word is derived the European word marmalade. The above-named Spanish marmalade was already exported to Rome in the time of Galen. The quince-tree is not very common in Italy now, certainly much rarer than it was in ancient times, when the pineapple and orange were still unknown. In the East, on the contrary, and all over Eastern Europe, that region of preserves and confectionery, the quince was through the Middle Ages, and is to the present time, a cheap and common sweetmeat of loungers in the bazaars; of which we see a striking proof in the variety of names bestowed on it by the different Slav nations, some of them being Persian and Turkish words.

THE ROSE. *THE LILY.*

(ROSA GALLICA, CENTIFOLIA.) (LILIUM CANDIDUM.)

THE flowers of the East seemed no less wonderful and attractive to the warriors, shepherds, and husbandmen of the West than the golden and scarlet fruits of which we have spoken. In the East, flowers were trained, improved, and made into ointments and washes by the children of an effeminate civilization, who lived only to please their despots and perform religious rites. Roses and lilies were already known to the Greeks in the period of the Epics: at first only by report as something splendid in shape and colour, and then in the form of scented oils, till gradually the plants themselves were introduced. Both flowers are employed by Homer and Hesiod in figures of speech. Those poets call Aurora (the dawn) *rosy-fingered;* in a Homeric Hymn she is *rosy-armed*, and the same epithet is applied to two daughters of Nereus. Venus anoints the corpse of Hector with *rose-scented* oil; Hector threatens to mangle the *lily-tender* skin of Ajax with his spear; the voices of cicadas and of the Muses are termed *lily-voices.* All these are mere comparisons, possibly taken from things which the poet only knew by hearsay; and indeed an ancient critic asks how it is that Homer was acquainted with rose-oil, but did not know the rose. The flowers themselves do appear in the Hymn to Demeter—that venerable record of the ancient Eleusinian worship of the goddess—but still in a strange fantastic guise: Proserpine plays with her companions in a meadow, plucking roses (the flower being apparently scattered over an ideal meadow, not plucked off a bush nor protected by thorns); then, besides crocuses, violets, and irises, she picks the Narcissus, a

newly-created wonder, at whose sight men and gods are astonished, rearing its hundred heads from one root, rejoicing sea, earth, and sky with its perfume—evidently a glorification of the symbol of the Narcissus used in mysteries, which, as its name proves, was originally only the representative of intoxicating, exotic floral scents in general. In a later part of the same hymn, Proserpine tells her mother how she played in the charming meadow, and plucked "cups of roses and lilies too, a marvel to look at"—expressing the rarity and fabulous character of those splendid flowers. Some of the names of the nymphs accompanying Proserpine are taken from the rose: Rhodeia, Rhodopē (the rosy), Okyroē *kalykôpis* (O. with a face like a rose-cup); and the same adjective is applied to a nymph in the Hymn to Aphrodite. At last, in a fragment of Archilochus—who lived a generation earlier, but whose sphere was wider than that of the Eleusinian temple-poetry, and included Thrace and Lydia as well as the Islands—we have the rose-bush itself, whose blossoms, with sprays of myrtle, adorn a maiden, doubtless Neobule, the beloved of the poet. A hundred years after, the rose became Sappho's favourite flower; in her poems she sings its praise, and uses it as a simile for beautiful girls. From that time we find the rose and lily installed among the festive decorations of the joyous Greeks, and everywhere intimately connected with the life and customs of that nation. Now, where did those plants come from? In what part of the East, and among what people had the *Rosa gallica*—itself a native of Europe, and the parent form of the centifolia—been transformed by cultivation into the sweet-scented rose of the sixty or hundred leaves?

It is not surprising to find the rose named in the apocryphal books of the Old Testament, for those books belong to the Grecian age; but, if we follow Luther's translation, we find the rose mentioned in the older parts of the Bible, for example by Hosea (xiv. 5), who lived in the eighth century B.C.: "I will be as the dew unto Israel; he shall bloom like the *rose*." So, in Solomon's Song ii. 1, 2: "I am a flower in Sharon, and a *rose* in the valley. As a *rose* among thorns, so is my love among the daughters." [English readers will remember that

their Bible changes "rose" every time into "lily," though its "rose of Sharon" is a blunder similar to Luther's.] But Luther, following the Rabbinical interpretation, has wrongly translated the Hebrew *susan*, *susannah*, by rose; it really meant the lily, and not so much the white lily, *Lilium candidum* (Grk. *leirion*), as the coloured fire-lily (Grk. *krinon*, by which the Septuagint translates it), or even more probably a species of the bell-shaped crown-imperial, *fritillaria*. It follows that the Greeks were earlier acquainted with the cultivated garden-rose than the Hebrews, and that it is consequently not a Semitic plant. The absence of the rose in the sculptures and paintings of ancient Egypt, in which floral ornamentation is not wanting, is another proof of the above assertion; and Herodotus, in his descriptions of Egyptian customs, only mentions the lotus flower and the rose-like *krinea* (note 55).

Being now, in what relates to these two flowers, the rose and the lily, directed to Central Asia, we are greatly assisted by *language*, which so often reveals depths in the primitive world to which no history can penetrate. The Greek *rhodon*, in an older form *brodon*, the rose, and *leirion*, the lily, are originally Iranic words (note 56); so that both the names and the plants came to Greece from Media by way of Armenia and Phrygia.

Bright and glowing Persia is still the very land of flowers. The geographer Ritter says of Teheran: "The rose flourishes here in a perfection unknown in other regions of the world. Nowhere else is it so extensively planted nor so highly valued. Gardens and courts are filled with roses; rooms are crowded with rose-pots, and roses are strewn in the baths and constantly renewed from the ever-blossoming bushes. Even the *kalium* (a kind of hookah) of the poorest smoker in Persia is decorated with the hundred-leaved rose, and a smell of roses pervades everything." The poems of Hafiz have made all the reading world acquainted with the roses of Shiraz, in South Persia. In the time of Herodotus the Babylonians had already adopted the use of roses from their Medo-Persian conquerors. "Every Babylonian," says Herodotus, "has on his staff the figure of either an apple, a rose, a krinon, an eagle, or some other object." But the rose migrated

to Greece, as unmistakable traces in ancient fables prove, by way of Phrygia, Thrace, and Macedonia. The Nyseian fields, where Proserpine plucked roses and lilies, are to be imagined as lying in Thrace, and the name of her nymph, *Rhodopē*, is also the name of the Thracian mountain into which that nymph was to be transformed. According to Herodotus, the so-called garden of Midas, son of Gordias, lay at the foot of Mount Bermion, in Macedonia, where Strabo says the Brigians lived, who in Asia were called Phrygians. In that garden the sixty-leaved rose, whose scent was more delicious than that of any other, grew spontaneously. The Alexandrian poet Nicander expresses himself still more clearly, only that he makes use of the learned terminology of his time and school: Midas of Odonia (Edonia, a district of Thrace), after leaving Asis (in Asia Minor), was the first to plant in Emathian gardens (Emathia, a district in Macedonia) the sixty-leaved rose. Here the Old Babylonian number *sixty* is noticeable and of itself points to an Asiatic origin. Theophrastus also mentions the neighbourhood of Philippi, towards Macedonia, as the home of the full rose, which he already calls "hundred-leaved;" the inhabitants are said to have found it on the neighbouring Mount Pangæus, which was rich in gold and silver. And a fragment of Sappho, an ancient authority of great weight, points to the same region. Again, in the myths that cluster round the rose, we hear an echo of the Phrygian worship of nature. It is dedicated to Aphrodite; it is also the flower of Dionysus; it is at once the symbol of love and of death. How it came into being when Attis (the Phrygian Adonis) died, is variously related. Aphrodite creates it out of Adonis's blood; or that goddess, on hearing of her beloved's death, comes running through thorn-bushes, she wounds her foot, and *her* blood turns the white rose red; or again—and this seems the true Phrygian form of the myth—the flower springs up spontaneously from the blood of Adonis, as the pomegranate and almond do in similar cases: "For each red drop she sheds a tear; fall'n to the ground, both turn to flowers —his blood to roses, to anemones her tears" (Bion).

It was fabled of the Lily, the *rosa Junonis*, that it was made of

Hera's milk while she suckled Herakles in her sleep. The lily, with its pure unspotted colour, was an eyesore to Aphrodite; and she, to put the chaste flower to the blush, inserted the yellow pistil, suggestive of the wanton ass.

The garden-rose of the East was very early taken to Italy by the Greek colonists, as is proved by the popular transformation of *rhodon* into *rosa;* and with it probably went the lily, *lilium* (note 57). From Italy, without any change of name, both flowers have spread all over the world; but the farther they go north, the more they lose the strength and sweetness of the perfume that breathes around them in their native home. However, the rose throve well under the Italian skies; it remained in bloom the greater part of the year, according to its varieties, of which the rose of Campania is said to have been the earliest, and that of Præneste the latest. Campania produced the centifolia, and the Pæstum roses were famed for blossoming twice a year. *Rosa, mea rosa,* is already a term of endearment in the comedies of Plautus, and Cicero associates the rose with a life of luxury: "The fortitude of Regulus made him happier than Thorius swilling amid roses." It may have been only Oriental extravagance when Cleopatra caused the floor of the hall at Tarsus, in which she feasted Antony, to be covered three feet thick with roses; and it was in imitation of Bithynian kings that Verres, proprætor in Sicily, rode in a litter, the cushions of which were stuffed with roses, and held to his nose a net of fine lace filled with roses. But a glance at the lyrical or elegiac poets shows how the rose was everywhere connected with love and pleasure in Italy. The festive board is hidden under roses; lovers lie on roses; the floor is strewn with roses; the dancer, the flute-player, the boy who serves the wine—all wear wreaths of roses. The drinker crowns both himself and his wine-cup with roses. Roses and the revel of the senses are inseparable. And that the rose was also a flower of the tomb, that roses as well as tears were sprinkled on the dead, is a very ancient and psychologically not far-fetched idea and custom, one that was common in Italy, and proved by numerous epitaphs. For the rose that issued from the blood of the dying god of nature is as fleeting as it is fair: "If thou hast passed by a rose, seek it

not again," says a Greek proverb; and the Italian saying runs: "There is no rose of a hundred days." The rose represents the greatest, though but a momentary, fulness of life; and for the sake of the former quality, it is thirsted for, like wine and blood, by the pining shadows in the realms of the dead.

Roses were used in the composition of essences, sweet-waters, and ointments, and, in the form of rose-wine and rose-water, in pharmacy, and even, as ancient writers report, in the kitchens of rich epicures. No wonder that rose-gardens were abundant, and that their produce, as well as that of lily-beds, were offered for sale by flower-sellers. Even before the fall of the Republic, Varro advises persons who have property near the city to plant violets and roses as a profitable speculation, and names the best season for doing so. But far away, as far as Campania and Pæstum, the needs of the rich and enormous capital were provided for by extensive flower-gardens. During the Imperial Age, when luxury was constantly increasing and Oriental manners were imitated, a senseless extravagance in the use of flowers was the fashion. To possess roses in summer was too common by far, one must have them in winter and early spring: "Do not those who desire roses in winter live contrary to nature?" complains the philosopher Seneca; and Macrobius names "snow in summer, and roses in winter," as parallel requirements of luxury. Martial reports that winter roses were brought in ships from Egypt, and that roses and lilies were grown under glass in Rome. In all this the Orientals had preceded the Romans. Florus relates of Antiochus the Great, a true Greco-Oriental despot, that, after commencing the war with the Romans, and taking the islands, he caused tents of silk embroidered with gold to be erected on the Euripus, which is a flowing water; and there he enjoyed every luxury, even roses in winter;—the Romans soon drove him home again, "already conquered by his own luxury," adds the author. The later Roman emperors were equally luxurious. L. Ælius Verus, his biographer tells us, invented a new kind of bed, stuffed with rose leaves, from which the white parts had been taken away, covered with a carpet of lily-leaves, the whole enclosed in a fine net. He lay at table on cushions stuffed with *washed* roses and lilies. Still more extrava-

gant things are related of Heliogabalus. This emperor of Syrian origin not only caused all the rooms of his palace to be carpeted with roses, lilies, violets, hyacinths, and narcissus, but his guests were so deeply imbedded in flowers while reclining at table, that some of them, being probably heavy with wine, were unable to rise, and died of suffocation.

Through all the wars and destruction of the Middle Ages, the rose and lily, easy to train, and appreciated by the rudest of men, continued to be cultivated. The mediæval poets, who have not many colours at command, make abundant use of the rose and lily in their descriptions. Both were taken into the service of religion as favourite symbols. The beauty and graciousness of the Virgin were emblemed by the rose, and heavenly purity by the lily. Gothic churches adorned themselves with mystic roses of stone; in pictures of the Annunciation the angel carries a lily-stalk, sometimes—and this is characteristic—the cup being represented *without* pistils.

Both flowers were employed in the heraldry of that figurative period. Well known are the three lilies (said to have been originally spear-heads) in the royal arms of France, which were appropriately bestowed on the Maid of Orleans at her elevation to the peerage; and the Red and White Roses of the contending dynasties of England. Among the innumerable particulars in connexion with our subject that may be gathered from the religion, art, and manners of the Middle Ages, we will mention two, both of which were fundamentally derived from the same source: we mean the so-called *Golden Rose* of the popes, and the mythical figure of the *Rusalka* among part of the Slav nations. On the fourth Sunday in Lent, which falls in spring, the pope, dressed in white, consecrated on the altar of a chapel adorned with roses, in the presence of the College of Cardinals, a golden rose, which was afterwards presented as ensuring a blessing to princes and princesses, and even to churches and towns. The pope dipped the rose in balsam, sprinkled it with holy water and incense, and prayed to Christ as the Flower of the field and the Lily of the valley. Shortly before the Reformation, Frederic the Wise, Elector of Saxony, received the Golden Rose; and in our time it

has been bestowed on the ill-fated Empress Charlotte of Mexico, and the pious Isabella II. of Spain. Notes relating to this peculiar custom may be found as far back as the eleventh century, when Leo IX. was pope; but its origin is evidently connected with the ancient Roman conception of the rose as the symbol both of life and of perishableness, which in the hand of a conqueror expressed not only his glory and his joy, but also his mortality and humility.

Equally interesting is the Slavic *Rusalka*, as a living proof that nations, still mere worshippers of nature, are apt to form mythic personifications out of small circumstances, the sound of a word, general ideas, and foreign influences. Rose-festivals, *rosaria*, *rosalia*, were still celebrated in Rome shortly before the fall of the Empire on certain days in May and June; and consisted in decorating tombs with roses, and in social banquets at which roses, the product of the season, were presented to the guests. So, among the Romanized country-folk in the Illyrian peninsula and on the Danube, such spring or summer festivals were held under the Latin name of *rousalia;* there, no doubt, in continuation of the Dionysiac summer festivals traditional among the Thracian peoples, and the enjoyment of roses inseparable from them. In the Christian era, Whitsuntide, which occurred in May, inherited the *rosalia;* and was called the *pascha rosata* or *rosarum* (to this day it is called by the Roman populace *pasqua rosa* or, by mistake, *pasqua rugiada*); and on Whitsunday, the so-called *Domenica de rosa*, roses were let down to the people from the roofs of churches. Afterwards, in the sixth century, when swarms of Slavs occupied the countries on the Middle and Lower Danube, and east and south of the Carpathians, halting between heathenism and Christianity, the Christian Whitsuntide, or rose-feast, naturally became amalgamated with the heathen Spring-feast of the barbarians. Among the Slovèns, Serbs, White and Little Russians, and Slovaks, this Whitsun or Spring-festival was called *rusaliya;* and *out of the feast* was developed, among the White and part of the Little Russians, a belief in supernatural female beings who frequented the fields and woods at that season, *i.e.*, the Rusalkas, a mythic counterpart of the gay and roving Slav maidens who bound wreaths and interrogated self-invented oracles. Miklosich, in 1864, first gave

this explanation of the historical origin of that belief. In Germany, too, the southern rose and the Italian rose-festival became mingled with the Old-German notion of a fight between Winter and Summer; as the Slavs received this form of the festival and this dressing of the myth from the Lower Danube, so the Germans received it from the Celtic-Roman Tyrol and Italy.

In modern times floriculture has produced innumerable varieties of the Rose, of all shapes and colours, and provided them with fancy names. Periods have not been wanting when the rose was supplanted for a time by flowers brought from distant countries, by dahlias, camellias, azaleas, etc.; but in spite of changes in fashion, the rose will always re-establish her reign as queen of flowers. In countries north of the Alps, especially in England, art may occasionally improve and perfect the flower; but it will never be so intimately connected with life, nor blossom almost all the year round in gardens and on walls, as it does under the bright skies of Naples. The cultivation of the rose has been well prosecuted in the East, so far as that part of the world has not lapsed into barbarism. The rose was always celebrated in Eastern poetry, and the loves of the rose and nightingale were constantly sung; even now the petals collected from vast rose-fields are used in the preparation of costly essences and confectionery. Old Busbequius in the sixteenth century tells us in his first letter from Constantinople, that the Turks would not allow a rose-leaf to lie on the ground, for they believed that the rose sprang out of the drops of sweat that fell from Mahomet's brow—still the same unextinguished legend of Adonis, only translated into prose and Islamite. On the so-called grave of Ali near Messar, in the vicinity of modern Balkh and ancient Bactra, the traveller Vambéry saw the wonder-working red roses (*güli surkh*), which really seemed to him to excel all others in colour and scent, and which have never been planted elsewhere, because the local Islamite legend says they will thrive nowhere else.

The ancients, as some of our citations show, often mention the *Violet*, or Pansy, together with the rose and lily, as an ornament of the garden and of the person. Its history runs parallel with that of the rose. As a garden-flower and in its improved forms,

the *viola* also came from Asia Minor. Homer uses *ion* in making descriptive adjectives (*io-eides*, *io-dnephes*, *io-eis*), but only with reference to its dark colour, not to the scent. Once in the Odyssey *ion* itself appears in the description of the wondrous scenery around Calypso's cave, where it grows in moist meadows with the parsley: "bad company for it," says Fraas; but even here it means *any* dark-coloured flower, whether scented or not. Afterwards a distinction was made between the dark and the variegated light-coloured violet, which latter generally meant both the gillyflower (*Matthiola incana*), and the wall-flower (*Cheiranthus cheiri*). The Latin *viola* was doubtless derived from the Greek *ion* (originally *vion*), and we may therefore conclude that the cultivation of the violet was introduced by way of Greece which itself owed its knowledge of the plant to Asia.

THE SAFFRON.

(CROCUS SATIVUS.)

ANOTHER flower, early celebrated, equal to the rose in esteem, and excelling it in practical utility, was the Oriental saffron (*Crocus sativus*), the dignified aristocratic cousin of the modest European crocus of springtime, *Crocus vernus*. Besides its odour, which enchanted the ancient peoples of the East, and later those of Europe, a lasting yellow dye was obtained from the stigma of the flower. Garments, veils, and shoes dipped in this dye seemed to the eyes of the oldest founders of religion and culture in Asia as glorious as purple, both in themselves and as expressing light and majesty; for the fettered intellect of those dreamy times could not separate reality from symbol. "You Phrygians love garments dyed in saffron and gaudy purple, sleeved tunics, fillets round the head, and inaction," cries Romulus to the Trojans (Æneid, book 9, line 614). Saffron-yellow shoes formed part of the dress of the Persian kings, which was copied from the older Babylonio-Median costume. In Æschylus's "Persians," the chorus summons dead Darius from the nether-world with the words: "Rise, ancient ruler, rise; come with the saffron-dyed eumaris on thy feet, the royal tiara on thy head!" The oldest mythic-poetical representations of the Greeks show traces of the sanctity attributed by Eastern nations to pure bright saffron-yellow. When Jason the Argonaut prepares to plough the field in Colchis with the fire-breathing bulls, he throws off the saffron-coloured garment with which he is clothed. Bacchus, the Oriental god, wears the *krokotos*, the saffron dress, and so do the reeling participators in the joyous feasts celebrated in his service. The new-born

Herakles is described by Pindar as swathed in crocus-yellow cloths.

But especially goddesses, nymphs, queens, and vestals are imagined clothed with saffron-yellow garments, or such as are ornamented with that colour. The Attic virgins embroider with many colours the crocus-dress of Pallas Athena. Antigonē, in her despair at the deaths of her mother and brothers, lets fall the royal crocus-coloured stolis which adorned her in the days of her pride and joy; so does Iphigenia when preparing to be sacrificed at Aulis. Venus clothes Medea in her own crocus-woven garment. Andromeda chained to the rocks (or rather Mnesilochus disguised as such) has assumed the *krokoeis*. Helena takes with her from Mycenæ her gold-embroidered *palla* and crocus-bordered veil, the gifts of her mother Leda. In the Epics, Eos (the dawn) is always *krokopeplos*, saffron-veiled; so is the river-nymph Telesto in Hesiod, and Enyo the daughter of Phorkys and Keto; so are the Muses in Alkman. The hair of the maidens in a myth is commonly of saffron hue, as that of Ariadnē at Naxos (Ovid), and of the fair daughters of Keleos hurrying, with their skirts tucked up, to the well by which Demeter sits (Hymn to Dem.).

Thus an acquaintance with the saffron *dye* can be traced back to the period when the heroic myth was developing; that it was obtained from the East, the word *krokos* itself would prove if the fact were at all doubtful. The Hebrew form of the word was *karkôm*, as is seen in Solomon's Song iv. 14; the form would vary in other Semitic dialects, but the sound on the whole remain the same. In Cilicia was a promontory *Korykos*, and not far from it the Corycian Hollow, where, in a valley, grew the finest of genuine saffron; it is natural to suppose that both hill and valley took their names from the plant. In so far as Greece is concerned, it is indifferent whether the Semitic word was, or was not, derived from an Indian word that had been introduced by primitive traffic; the Greeks, at all events, received the yellow or yellow-broidered garments as costly wares from the Semites. This must have happened during, and even before, the epic period; it is another question whether the Homeric singers had

ever seen the flower itself. It is true that Homer makes crocuses, lotuses, and hyacinths spring from the earth at the union of Jupiter and Juno on Mount Ida :

> "And clustering lotus swell the rising bed,
> And sudden hyacinths the turf bestrow,
> And flaming crocus made the mountain glow "—ILIAD ;

but no doubt the poet would adorn the ideal bridal-bed of Heaven and Earth with the most glorious things he had ever heard of far and near. Again, crocuses grow on those mythic meadows, the scenes of the adventures of gods, as when Proserpine is carried off by Pluto while "picking roses, crocuses, and violets on the tender mead." Creusa the daughter of Erechtheus is pictured by Euripides as filling her lap with the golden crocus when surprised by Apollo. The companions of Europa, when Jupiter approached her in the form of a bull, are busy gathering the fragrant hair of the golden crocus ; and when Pan and the nymphs pass singing through the lush meadow, the crocus and hyacinth bloom fragrant mid the tangled growth of grasses. When fancy invented these scenes, attention can hardly have been awakened by the humble native kinds of crocus ; the foreign Asiatic plant was always meant. In Sophocles' glorious song of triumph on Kolonos, the actual spring-flowers growing on the spot were transformed in the eyes of the enthusiastic poet into the golden *Crocus sativus* of the East.

Theophrastus already distinguished the wild or "mountain" crocus, *i.e.*, *Crocus vernus*, from the "tame" and scented. He calls the former the white, and a third kind the thorny crocus ; both without scent. But the flower lost part of its aroma in colder Europe, where it easily degenerates. Of all the places inhabited by Greeks, the crocus of Cyrene, on the African coast, bore away the palm.

In the Roman gardens we find the crocus as well as the rose, lily, and violet. But the flower was a stranger, and its cultivation a triumph of the art of acclimatization, for Columella ranks it with cassia and myrrh. Pliny said it was not worth while to plant the saffron in Italy ; yet it must have been cultivated there, for Sicilian saffron is praised, and compared with the Italian.

At any rate, what cultivation there was did not suffice to supply the market, and quantities of saffron, partly raw, partly in the form of essences, salves, medicines, and dyed stuffs, were imported from the sunnier East. Opinions were divided as to where the best grew. Theophrastus praised that of Cyrene, Virgil that of the Tmolus mountains in Lydia. The saffron from Mount Corycus in Cilicia was generally esteemed the finest, that of the Lycian Mount Olympus next, and lastly that of the Æolian town of Algæ in Asia Minor. Pliny gives the third place to the saffron of Centuripæ in Sicily, a town at the foot of Etna. When Roman luxury was at its height, crocus-scent and crocus-flowers were used as lavishly as rose-leaves. Even under the Republic it was customary to sprinkle saffron-water in the theatres for the sake of the sweet smell; and a banquet being given in honour of Metellus Pius, the banqueting-hall was adorned like a temple, and the floor strewed with crocus-flowers; therefore it is not surprising when we learn that in the Imperial age the statues in the theatre dropped with saffron-juice; or that Heliogabalus bathed in saffron-water, and made his guests lie on cushions stuffed with crocus-leaves. Saffron was also largely used in medicine and for cooking. It was a favourite spice in meats and drinks, and it was rarely wanting in a medicinal recipe. The estimation in which saffron was held by the ancients remained undiminished or even increased during the childishly dependent Middle Ages. The story goes, that in the reign of Edward III. a pilgrim brought a saffron-bulb to England from the Holy Land in the hollow of a stick, for the costliest things on earth were only to be obtained secretly and at the risk of life. In reality it was the Arabs who introduced the cultivation of saffron into Europe; they succeeded in accomplishing what had either been tried in vain by the ancients or never attempted in earnest. From the Spain of that time date the saffron-fields in the Mediterranean countries, where the Arabic name of "saffron" (Ital. *zafferano*, Span. *azafran*) has quite supplanted the Greco-Latin "crocus," which itself must have come from the confines of the same Arabia some fifteen or twenty centuries before. The only thing in which the times have changed is, that people have become

indifferent to the aroma of this flower; they neither think the taste and smell charming, nor depend on it exclusively for imparting a bright yellow to stuff and leather; and this is the case not only in Europe, but, what is more remarkable, in the East also. This decline of saffron in Asia proves that even in that stationary part of the world, so fettered by immutable natural conditions, slow changes do take place in long periods of time, and the nerves acquire a new tone.

We will add that a similar but less important dye-yielding plant, the Safflow or Zaffer (*Carthamus tinctorius*), a kind of thistle native to the East Indies, had become known to the Greeks by way of Egypt. Its Greek name *knêkos* is somewhat like the Indian one, and doubtless came through the intermediate country mentioned. Theophrastus and Aristotle were acquainted with the name, and Theocritus uses it as an adjective in the sense of *yellowish*. Theophrastus does not mention the use of the plant as a dye, though that must have been the sole reason of its propagation. The seed is eaten in modern Egypt, and in Italy it is used for curdling milk. But the Arabs were the first to teach its cultivation on a large scale, and its use as a red and yellow dye; from them too came its name, in Italian *asforo*, *asfiori*, in German *saflor*, and in English safflow or zaffer, etc.

THE DATE-PALM.

(PHŒNIX DACTYLIFERA.)

THE date-palm is, according to Ritter, the true "representative of the subtropical rainless zone of the Old World," a zone of which Babylon, the palm-surrounded capital of the Semitic nations, may be called the central point. The tree thrives best between the 19th and 35th degrees of north latitude; south of the Indus mouth, and equally in Darfour (13°–15°) it no longer exists; more to the north it needs a mean annual temperature of from 21° to 23° Centigrade to bear edible fruit. It requires a sandy soil and the scorching heat of the desert; while, on the other hand, humidity is equally necessary to nourish its thirsty roots. "The King of the Oasis," says the Arab, "bathes his feet in water and his head in heaven's fire." No storm can break or uproot a date-palm, for its trunk consists of the intertwined fibres of the leaf-stalks, while the ramifications of its roots crossing one another chain it to the ground. It attains a height of fifty feet and more, and grows slowly, arriving at its full prime in about a hundred years. From that time it begins to decay. No sunlight can penetrate the sheltering roof formed by its drooping, whispering leaves; under it are shade and coolness and fresh-water springs, and small fruit-trees and other plants cover the ground. All the Arab villages or single huts are buried in a grove of palm-trees, and the traveller in the desert rejoices when he sees their dark outlines appear above the horizon, sure that he will there find a human habitation and hospitality. "Honour the date-palm," the Prophet is said to have taught, "for it is your aunt on your father's side; it is made of the same stuff as Adam, and is the

only tree that is artificially fructified." At the present time the date is the daily bread of the Arab, and the most important article of trade in Arabia. But the tree was not always so valuable as it is now. It was the hand of man that made the fruit sweet and fit to eat, so that whole tribes can now live almost exclusively upon it.

The most ancient notices of the date-palm do not speak of it as a fruit-bearing tree. The art of cultivating it was first discovered and practised, according to Ritter, by the Nabatæans of Babylonia, in the plains bordering the lower Euphrates and Tigris. In that region forests of fruit-bearing palms stretched continuously for miles; there the tree almost sufficed for all the necessities of life. Strabo mentions a Persian (Plutarch says a Babylonian) hymn, in which 360 different uses of the palm-tree are enumerated (360 is the mystic astrological number of the Egyptians, repeated in the 360 ladies of the Persian king who fell into the hands of the Macedonians). From the region of the Euphrates and Tigris the cultivated date-palm spread to Jericho, Phœnicia, the Ælanitian Gulf in the Red Sea, and elsewhere. This remarkable fact in the history of cultivation can only be paralleled by another, *i.e.*, that the camel was first introduced into Africa as late as the third century of the Christian era, although that animal seems expressly made for the Libyan desert, and has opened that impenetrable region to foreign nations, their trade, and their religion. Brugsch, in his "Histoire d'Egypte," says: "*Nous remarquons que le chameau, l'animal le plus utile aujourd'hui en Egypte, ne se rencontre jamais sur les monuments*" (note 58). The camel and the date-palm, two organisms that are intrinsically akin, and subject to the same conditions of existence, not only belong originally to the Semites of the desert and oasis, the nation of bitter toil and dreamy leisure, but were, so to speak, created by that nation, which tamed and bred the camel, and cultivated the wild palm till it bore honeyed fruit, thus rendering a whole region of the earth fit for human habitation.

The climatic conditions on which the date-palm depends naturally forbid any introduction of it into Europe in the sense in which we speak of the vine, the olive, and the cherry-tree having found a second home there. The date-palm was indeed planted and lived

on the northern edge of the Mediterranean, but it no longer bore fruit. It was a charming and strange ornament to the landscape, lending to it a transient gleam of the sunny eastern lands that lay beyond; it was regarded as a marvel of nature by the inhabitant of the northern mountains when he descended to the coast; but he could not, like the Oriental, securely link his destiny with it, and dream away his time beneath its shadow, inventing and listening to fairy-tales; his was a more laborious lot under the inclement sky of Europe. It is true that all tree-culture, though demanding a thoughtful and connected course of action, is an easier, and, in a sense, humaner occupation; but of life under the date-palm this is so excessively true, that here Man, finding his wants provided with little action of his own, lies for ever shackled by a gloomy fatalism; and beneath the dignified repose that seldom leaves him a ferocious passion slumbers.

From whom the Greeks obtained the knowledge of this wonderful tree is shown at once by the name they gave it. As *phœnix* (purple or crimson) meant the Phœnician dye, and *phœnix*, *phœnikion* (a sort of guitar), the Phœnician instrument, so *phœnix*, date-palm, is simply the Phœnician tree (note 59), which, as the characteristic product, and, at the same time, symbol of that country, is to be found figured on the Phœnician and, later, Carthaginian coins struck in Sicily. The Iliad never mentions the palm, which was as foreign on the Anatolian coast as in Greece proper; but in the oldest and most beautiful part of the Odyssey, the palm at Delos is described in words that express the admiration excited in the Greeks of the Epic period by a figure so novel and strange in the vegetable world. Ulysses has approached Nausicaa on the strand, and flatteringly beseeches her assistance:

> "Never, I never viewed till this blest hour
> Such finished grace! I gaze, and I adore!
> Thus seems the palm, with stately honours crowned
> By Phœbus' altars; thus overlooks the ground;
> The pride of Delos. (By the Delian coast,
> I voyaged, leader of a warrior-host;
> But ah, how changed! from thence my sorrow flows;
> Oh fatal voyage, sum of all my woes.)
> Raptured I stood, for earth ne'er knew to bear
> A plant so stately, or a nymph so fair."

The far-travelled Ulysses had nowhere else on earth seen a tree like this, to the slender form of which he compares the figure of the royal maiden, just as Solomon does in his Song, "This thy stature is like to a palm-tree," and as the daughters of kings in the Old Testament bear the name of *Tamar*, the date-palm. The palm-tree, the pride of Delos, is also mentioned in Homer's hymn to the Delian Apollo; at its foot, clasping its stem with her arms, Leto was said to have given birth to her glorious son. The fame of the Delian palm grew with the increasing fame of the island, both as a resort of Apollo's pilgrims and as an emporium, especially because its fame had been echoed in the Odyssey (note 60). In later times, palm leaves were used at the four great festivals as symbols of victory. They were sometimes worn in wreaths on the head, sometimes carried in the hand. In explanation of this custom, tradition relates that Theseus, on his way home from Crete, instituted games at Delos in honour of Apollo, and adorned the victors with palm-branches, an example which was afterwards imitated. We take this to signify that not only the palm as an attribute of the God of Day, but also the palm-branch as a symbol of victory and joy, came from the Semites by way of Crete and Delos; for the palm and its branches were used by the Semites in the same manner—witness the Jewish Feast of Tabernacles; and Theseus not only personifies the deeds of the Attic Ionians and their voyages between Crete and Athens, but appears as a zealous worshipper of the Semitic Aphrodite. Instead of Theseus, a local legend related that the first thing seen by *Herakles* on returning from the nether-world was a palm-tree, with the branches of which he crowned himself. Here we cannot mistake the God of Day, of whom the palm, the tree of light, is an attribute. On that occasion the Arcadian hero Iasius, the first winner of a race, received the palm of victory from Herakles; his statue was seen by Pausanias at Tegea, which represented him leading a horse with his right hand, and carrying a palm-branch in his left. In the middle of the seventh century B.C., the tyrant Kypselus, ruler of semi-oriental Corinth, dedicated a bronze palm-tree to the temple at Delphi, where there were no living palms. The frogs and watersnakes represented at the foot of this bronze

tree sadly puzzled later mythologists and commentators; probably the artist only meant to express, in a realistic manner, that the palm, the child of the desert, could not live without some water, but preferred stagnant water—a fact which he had no doubt learned in Corinth. The Athenians also erected a bronze palm-tree at Delphi, in honour of their double victory on the Eurymedon, and another at Delos through Nikias. Palms are found figured on coins of Ephesus, of Hierapytna and Priansus in Crete, of Karystos in Eubœa, and on painted vases, as attributes of Leto and Apollo, and palm-branches as the reward of victory. A dithyrambus by Pindar proves that the Argive Nemea possessed its palm in his day. Pausanias saw palms growing in front of the Temple of Artemis at Aulis, which did not bear such fine dates as those of Palestine, but sweeter than those of Ionia. So, in spite of the Pythagorean prohibition against planting date-palms (because the use of the branch in sign of victory was considered impious by the sect), the tree gradually came to surround some of the cities and sanctuaries of Greece with its graceful groves, to the admiration of all who saw that Babylonish-Libyan wonder for the first time.

Turning to the fortunes of the palm-tree in Sicily and Italy, we must first of all draw attention to the difference between the date-palm (*Phœnix dactylifera*) and the dwarf-palm (*Chamærops humilis*), the latter being a bluish-green bush, generally stunted in form, that thrives in hot places in Spain, Sicily, and South Italy, whose young leaves, roots, and fruit are eaten, and of whose fan-shaped leaves brooms are made, ropes are twined, and basket, mats, etc., are woven.

In consequence of the name *palma* being common to both plants, the ancient references to the *dwarf-palm* have often been erroneously applied to the history of the *date-palm*. But Theophrastus already distinctly separates the two kinds: "The so-called dwarf-palms (*chamairipheis*, groundling)," he says, "are very different from the date-palms, although they bear the same name; they survive the extraction of the brain (the savoury leaf-buds, whereas the date-palm dies when the *cerebrum* is taken away), and when they are cut down, the root sprouts again, which is not

the case with the date-palm. The fruit and leaves are also different; the latter are broad and soft (not unlike those of the fan-palm) so that they are braided into baskets and mats (as is the case in the present day). Dwarf-palms are frequent in Crete, and still more in Sicily." Cicero relates that the sailors of the fleet, deserted by its commander, nourished themselves on the roots and sprouts of this Sicilian coast-palm. When Virgil speaks of *palmosa Selinus* he means the dwarf-palm, which still covers the waste coast round the ruins of ancient Selinus near Castelvetrano. The besoms with which the mosaic pavements mentioned by Horace were swept were made of the same palm, and so were the ropes, cords, and mats mentioned by Varro, and the mats with which the vines of the province Bætica were sheltered during the dog-days. Columella's *Palma campestris* is evidently the *Chamærops humilis*, which is also alluded to in his *regio palma fœcunda.* The verb *palmare*, to tie up young shoots, could not have been formed either from *palma*, the palm of the hand, or from *palmes*, *palmitis*, but only from *palma*, the dwarf-palm. Even the *planta palmarum* or *cephalo*, spoken of later by Palladius as covering the dry ground that bears no other plant, can be no other than the *Chamærops humilis* which is still called in Italy *cefaglione* (from *encephalos*, the edible young shoots). The Isle of Palmaria, now Palmarola, took its name from the palm-bushes with which it was once overgrown.

Still we meet pretty early with the date-palm, the palm as a real tree, in Italy. It is true, when the legend relates that Rhea Silvia, the mother of Romulus and Remus, saw in a dream two palm-trees growing before the altar of Vesta, one of which shaded the whole earth and touched the sky with its summit, such a Greek legend could only have been invented when Rome was already powerful and victorious; it was imitated from the vine that, springing from the lap of Mandanē the daughter of Astyages, grew till it covered all Asia; or from the olive wreath seen by Xerxes in a dream, which spread over all the earth. But even in Rome's earlier time, when the city was still small, and its name not far known, the *tunica palmata*, adopted like other badges of magisterial pomp from the Etruscans, was already

embroidered with leaf-forms taken from the Oriental date-palm. Palm branches, as a sign of victory in the Roman games, were first used in the year of the city 459 (B.C. 293) in imitation of the Grecian custom. From these two facts, it is true, we could not with certainty conclude that the date-palm actually grew in Italy at that time; for the leaves used in the games might have been brought by ship to Italy, just as they are now furnished for Jewish and Christian festivals; and the more as the leaves do not easily fade. But about the same period, in 291 B.C., the following miracle occurred in the grove of Apollo at Antium. The Romans, during a plague, had fetched the snake of Æsculapius from Epidauros, and landed it at Antium. The snake, which so far had willingly followed the messengers and guessed their intentions, now escaped from the ship, twined itself round a tall palm-tree, and after three days quietly returned to the ship, which then sailed up the Tiber to Rome. Whatever we may think of this event, the existence of a palm-tree at Antium must be taken for granted as a point of departure; and such existence in a busy seaport town, and a place where Apollo was worshipped, is not at all improbable. We know from Livy 24, 10, that, in B.C. 214, there were palm-trees in Apulia. As at Antium, so in the Greek towns of South Italy, date-palms no doubt adorned the beautiful coast as the accompaniments of sanctuaries dedicated to Apollo. Varro's remark, that "the palm-tree bears ripe fruit in Judæa, but not in Italy," is a proof that there was no lack of palms in the Augustan age. But by whom was it originally introduced? Whence came the non-Grecian name of *palma*, if the use of the victor's wreath and the embroidering with palm-leaves were derived from Greece? The word cannot be explained from the Latin; and indeed how could such an exotic have a Latin name? *Palma*, we therefore conclude, is a corruption of the Semitic *tamar*, *tomer* (as the Greek *taôs*, peacock, became *pavo*), or it was imitated from a Semitic dialect in which the first letter of the word sounded like *p*. We find an analogy to this in the Biblical *Tadmor*, and its Greco-Latin name *Palmyra*, where translation is quite out of the question (note 61).

Preceding the Greeks, or, as we may say, slipping past them,

at a time when marine traffic was very active (as we see by the treaty of commerce preserved in Polybius), Tuscan or Latin sailors must have actually seen the palm-tree and learnt its name on the coasts of Libya, Sicily, and Sardinia; or, on the other hand, Punic merchants may have brought branches of it (*termites*, *spadikes*, note 62) to Italy, either as curiosities, or to adorn religious festivals, or as signs of homage to native princes and chiefs. So, too, the Etruscans may have become acquainted with the palm and its uses direct from the Carthaginians without the intervention of the Greeks. As we have before remarked, there was in those early times no question as yet of importing the *fruit* of the date-palm as an article of trade. The word *dactylus*, borrowed from Semitic, and having nothing to do with finger any more than *palma* has to do with hand, is only met with very late, in the time of the Antonines; but it spread through all the Latin languages (Ital. *dattero*, Span. *datil*, Fr. *datte*), and from these to the Teutonic tongues. There is another and older name, *caryota*, *caryotis*, which, first applied to a peculiar nut-shaped date, was frequently used in the first century of the empire. Poets also used the word *palma* for the fruit. But these expressions were afterwards lost, and *date* became the name generally used in the commercial language of Western Europe.

It is very easy to rear and propagate the date-palm, for the stone soon sprouts when buried in the earth. If the tree bore fruit in Europe as it does in Africa, there would soon be murmuring palm-groves on all the European peninsulas that stretch into the Mediterranean Sea; care would have been taken in those early days to plant trees of both sexes near together, and the Oriental method of artificially assisting the natural fructification would have been resorted to. On the downfall of the ancient world, when barbarism overwhelmed those regions, and the sense of grace in life was extinguished, the palm-trees that had survived antiquity gradually died out; they were unprofitable, and in those days a coarse and greedy self-interest was the only thing that swayed men's minds, besides self-torment and a longing for the other world. But the palm reappeared wherever Arabs settled on the Mediterranean coast. In Spain, about the year A.D. 756,

the Caliph Abdurrahman I. planted with his own hand the first date-palm in a garden near Cordova, from which tree all the other palms in modern Spain are descended. The caliph often regarded this tree with a longing remembrance of the Arabian home from which both caliph and tree were so far away. Palm-trees were also planted by the Saracens in Sicily and Calabria, but this Orientalism on European soil had but a short existence. A few stray specimens of the tree had remained down to modern times, as if by accident, to the joy and admiration of northern travellers, whose enthusiasm first drew the attention of the inhabitants to the picturesqueness and beauty of the tree. Meanwhile, in this as in so many other cases, the Christian Church had faithfully retained the imagery of heathenism and Judaism, and the same branch which had figured at the feast of Osiris in Egypt, which was used at the solemn entry of kings and heroes into Jerusalem, which was worn as a badge of victory at the Olympic games, and embroidered on the garments of Roman emperors, was now consecrated at Rome on Palm Sunday by the Head of Christendom, and distributed to all the churches of the eternal city. This custom led to the planting of the largest palm-grove possessed by modern Italy, that of Bordighera on the glorious coast-road from Genoa to Nice, between San Remo and Ventimiglia, almost under the 44th degree of north latitude. For some centuries (it is said since the erection of the obelisk in St. Peter's Square), the inhabitants of Bordighera have enjoyed the privilege of supplying Rome with palm-branches at Eastertide, and this industry gradually led to the planting of more than four thousand trees, which occupy many miles of country. The manner of producing the more expensive and much-prized *white* palms is this. From about the middle of summer the leaves of the tree are bound together in a bunch, so that the inner ones, deprived of light, can generate no chlorophyll, and thus in their whiteness become not only a symbol of victory, like the green leaves, but of heavenly purity, a thoroughly Christian thought, which never occurred to the ancients. A traveller passing through the *Riviera di Ponente* at Midsummer, sees the palms rearing their heads in the shape of gigantic tulips, and does not

understand at first what such a mutilation of the beautiful tree can mean. From Bordighera, specimens of the palm have been propagated here and there along the whole coast; at Rome the palm-tree in front of *St. Pietro in vinculis* is a model for painters of Bible scenes; whoever has visited the island of Capri has not failed to notice the palm-tree in the garden of the hotel Pagano; and in the Villa Nazionale of Naples there are a few fine trees, which, on dark summer nights, touched by the pale light from the flaring gas-lamps, hover like ghosts above the heads of the moving crowd below. The tree is seen more frequently in the still milder climates of Calabria, Sicily, and Sardinia. It is said that whole groves of date-palms used to flourish in the vicinity of Reggio, but they were either destroyed by the Arabs themselves when expelled from that coast, or were uprooted by the Christians as relics of those unbelievers. It is also related, that the kings of the House of Anjou, when attempting to reconquer Sicily during the fourteenth century, caused a whole forest of palms south of Palermo to be rooted up. At Elche, in Spain, to the south-west of Alicant, and near the border of hot Murcia, between 39° and 40° N. latitude, stands a celebrated palm-forest of 60,000 trees, which not only produce leaves for pious pilgrims, but luscious fruit for boys and girls. The Arabs were conquered, the Moriscoes exterminated or driven away; the wood of Elche, originally planted by unbelieving hands, remained as a sign of weakness of faith even among the disciples of Loyola. In the uttermost West, on the Isles of the Blest, in mid-ocean, the first explorers found fruitful date-palms; at least Pliny has preserved a statement to that effect by the Numidian king Juba. Is it possible that the sea had carried date-stones from distant Africa to the shores of the Canaries? In the opposite direction the early Arabs had profitably cultivated the date-palm even on the southern shore of the Caspian Sea, so that in this quarter the cold realm of the Russians has pushed its frontier almost to the sub-tropical zone of the date-palm; and if only a few unfruitful specimens now survive, Von Baer is inclined to ascribe it rather to the climate having cooled down than to the indolence of the present inhabitants.

THE CYPRESS.

(CUPRESSUS SEMPERVIRENS.)

HUMBOLDT, in his "Kosmos," tells us that the native home of the cypress is the mountains of Busih, west of Herat. Ritter, speaking of the Asiatic distribution of the cypress, agrees that the true home of the mountain cypress lies to the west of the valley of the Indus, in the tablelands of Caboul and Afghanistan, and particularly the above-named Busih, Bushank, or Fusheng, where the tree attains an enormous height. From this home the cypress migrated westward in company with the Iranian worship of the sun. The Zends saw in the slender, heavenward-aspiring, obelisk shape of the tree the image of the sacred flame. According to the *Shâh Nâmeh* the tree came from Paradise. Zoroaster himself had first planted it on earth; it bore witness to the truth of Ormuzd and the purity of his word; and all over Iran, venerable specimens of it adorned the temples of fire, the courts of palaces, and the centre of the Medo-Persian shrubberies or paradises. Following the path of the oldest Assyrio-Babylonian migrations, the cypress very early arrived in the countries of the Aramæo-Canaanite tribes, the Lebanon, and the Island of Cyprus, which took its name from the tree (note 63); and there, too, became a holy tree, in which a goddess of nature was present; the same shown to us in the Troad by Virgil, who describes her ancient deserted temple with the sacred cypress, in this case calling the deity Ceres, while in another he calls her Diana.

The practical value placed on the cypress by the Phœnicians, and which it continued to enjoy among the Greeks and Romans, was intermixed in a remarkable manner with its religious signifi-

cance. The wood of the cypress, scented and hard, and exhaling an agreeable odour when burnt, was considered both imperishable and indestructible. The land-lots of the citizens were ordered to be inscribed upon tablets of cypress-wood, and deposited in the temples to endure *for posterity*. Theophrastus speaks of cypress-wood as lasting longer than many other hard woods, such as cedar, etc. The timber of the cypress was preferred to all other kinds for building the Phœnician ships. Like Noah's ark, the Euphrates fleet of Alexander the Great was built of cypress-wood, which noble material he partly obtained in ready-hewn pieces from Phœnicia and Cyprus ; and Antigonus caused the splendid cypresses and cedars of Lebanon to be felled for constructing his fleet against the allied generals. Cypress-wood was used to make costly chests : for example, those in the temple of Diana at Ephesus ; it was employed for coffins as an extremely durable material. At the beginning of the Peloponnesian war, when there was public interment of those who had fallen for their country, their remains were enclosed in shrines of cypress-wood, on which occasion Pericles pronounced his celebrated oration in praise of Athens. On Hiero II.'s splendid grain-ship already mentioned, that "Great Eastern" of antiquity, whose chief architect was Archimedes, the walls and roof of the Aphrodisium were constructed of cypress, and the doors of ivory and ebony. But cypress-wood, sweet-scented and incorruptible, was chiefly used for making idols, of which there was an incredible number in all the Grecian temples. As Jupiter's sceptre was imagined to be of that material, it was also considered particularly suitable for *xoana*, *i.e.*, wooden images (together with ebony, cedar, oak, yew, and lotus-wood). The comic poet, Hermippus, who flourished at the beginning of the Peloponnesian war, in a remarkable passage describing the trade of the Mediterranean, mentions Cretan cypress-wood as being brought by sea to Athens for making *statues of the gods ;* and Xenophon relates how, on returning from Asia, he founded a small temple at Olympia to the Ephesian Artemis, and placed in it a statue of the goddess made of cypress-wood. The oldest statue of an athlete seen by Pausanias at Olympia was likewise made of cypress-wood, and was in better preservation than a

newer one made of fig-wood. It is the same thing in Italy. Pliny speaks of a very ancient idol, representing Vejovis, on the *arx* in Rome, made of cypress; and Livy relates that in B.C. 207, two cypress figures of Juno Regina were carried in solemn procession to the temple of that goddess on the Aventine. All precious things that were to be preserved from worms and insects, such as manuscripts, etc., were enclosed in boxes of cypress-wood.

No wonder, then, that the tree which yielded this wood, and was so highly venerated, should have been propagated by the Phœnicians and Philistines, wherever they settled and the climate was favourable, from the very earliest times. In Crete, that early Semitic island, the tree flourished so well and grew so high on the mountains, that the island came to be considered its original home. In Homer's Catalogue of Ships he mentions places in continental Greece whose names are taken from the cypress; one on Mount Parnassus in Phocis, the other in Triphylia, in the kingdom of Nestor. On the coast of Laconia, an early scene of Phœnician influence, there was a seaport town Cyparissia, and a place in Messenia had the same, or a similar name, while in both towns a goddess, Athena Cyparissia, was worshipped, whom we may presume to have been a Semitic deity under a Greek name. If we roam through later Greece in company with Pausanias, we find here and there cypress groves, in which—what is notable—deities of Asiatic origin were chiefly worshipped; for example, Ganymeda, in the Acropolis of Phlius, a goddess otherwise called Dia, the breaker of chains; liberated prisoners hung up their fetters on the cypresses near her temple; or Bellerophontes and Aphrodite Melainis, whose temples stood in a cypress grove near Corinth; or the heaven-high cypresses at Psophis in Arcadia, that grew beside Alcmæon's grave, and were called Virgins by the inhabitants, who never dared to touch them (note 64).

The Greek word for cypress, *kuparissos* (in early Hebrew, *gopher*, see Genesis vi. 14), puts it beyond all doubt that the tree migrated to Greece from Semitic countries. As frequently happened, Crete perhaps formed the intermediate station; at least the legend of the transformation of Cyparissus into a cypress-tree, points to such a thing. According to that legend, Cyparissus was a Cretan

youth beloved by Apollo or Zephyr; to preserve his chastity he fled *to the river Orontes and to Mount Casius* (the throne of Baal, God of Heaven, who was anciently worshipped by both the Aramæans and Philistæans), and was there transformed into the tree which took his name. As for the time when the cypress was introduced into Greece, it must of course have been *before* the foundation of the cities mentioned in the Iliad which bore its name.

In the oldest and most genuine part of the Odyssey, the fragrant cypress grows in the park around Calypso's cave—

> "Poplars and alders ever quivering play'd,
> And nodding cypress form'd a fragrant shade."

And in the second part of the poem, the scene of which is laid in Ithaca, cypress-wood at least is mentioned as building material, whether brought from a distance or found on the spot. Ulysses, disguised as a beggar, leans against the cypress door-post of his palace. In the more limited circle of Hesiod's poems, the cypress-tree is never mentioned.

The cypress being no fruit-tree (for which reason chatterers were likened to it), and its religious significance not greatly extended among the Greeks, its introduction to Italy can scarcely have been accomplished during the first Greek colonization of the country. Though Pliny speaks once of a cypress as old as the city itself, existing at Rome in Nero's time, in another place he more credibly informs us that the tree was foreign to Italy, and difficult to acclimatize. In the idyls of Theocritus, the scenes of which are laid in Sicily, we find the cypress frequently mentioned with praise. From Sicily the tree seems to have spread to the interior of Italy by way of Tarentum, for Cato calls it the Tarentine cypress. This may have been after the subjugation of Tarentum, when the influence of the Greek town made itself felt by the Roman conquerors, who gradually acquired a taste for villas, parks, monuments, and fine trees. The beauty and utility of the wood as material for wood-carvers and cabinet-makers were soon realized by the practical Romans, as is proved by Pliny's statement that the ancients called a cypress plantation their daughter's dowry. The trees planted at her birth grew up with the child,

at once a living capital, and her image and emblem (note 65). Rows of cypresses, as well as other trees, were used to mark out boundaries of property. When the Roman Empire embraced both Africa and Asia, the gloomy evergreen cypress also was in Oriental fashion extensively planted as the symbol of the Chthonian or subterranean deities, at first of course among the upper classes, who soon adopted the mystic language of signs peculiar to the East. The poets of the Augustan age regarded the cypress as the symbol of mourning, and frequently use it in that sense. From that time the splendid tree became naturalized in Italy, and, together with the pine, it forms the characteristic vegetation of South-European scenery. Where the cypress begins, there also begins the realm of forms, the ideal style; there we are on classic ground. Nevertheless, true cypress-groves, *cupresseta*, are not to be found in Italy; the tree generally stands solitary, or in small groups, or stretches away in a colonnade at once gloomy and graceful. Cypresses are as frequent in the valley of the Arno as pines in the Campagna Felice near Naples. The cypress never crosses the Alps, and however tall and slender some few specimens may be in Italy, for example in the Villa Este at Tivoli, it never attains such majesty as in its native East, where, as Ritter says, "imperishable, evergreen, and balmy groves of these pyramidal forms" spread their clear twilight over the white tombs of the faithful, and awaken a feeling of aspiring, inexhaustible, ever-renewed life, even in the presence of the dead.

A variety of the pyramidal cypress, the *Cupressus horizontalis*, with branches spreading sideways instead of upwards, is very rare in Italy and Greece, but is frequently met with in the warmer regions of Asia Minor.

THE PLANE-TREE.

(PLATANUS ORIENTALIS.)

THE fame of the plane-tree fills all antiquity, east and west, and is still echoed in the descriptions of ancient and modern travellers. What can be more beautiful amid the sterile rocks of southern lands, or what can turn the mind to greater reverence and admiration than one of these magnificent trees, with its bright foliage, its green-grey trunk, and its deeply-dented leaves, waving its ample boughs above some clear spring or purling brook? What sight can be more delightful than, standing on some sunburnt mountain top, to look down upon a group of plane-trees, certain to find beneath them shade and a cool spring, where the traveller may let loose and water his tired animal, quench his thirst, and repose his limbs? With what ecstasy Plato makes his Socrates describe the plane-tree, near Athens, under which he lies down to chat with Phædrus; the ice-cold water at their feet, the scented blossoms overhead, the cooling breeze, the song of the cicadas, the velvet turf—in words of such sweet fulness, that the far-fetched compliment paid them by Cicero falls altogether flat; namely, that "the tree seems to have grown out of Plato's language rather than out of the brook he describes."

Venerable plane-trees of immense height and great age are still found here and there in Asia Minor and the Greek peninsula, though these countries have been so denuded of forest by the hand of man. Celebrated far and near is the immense plane-tree of Vostizza, the ancient Aigion in Achaia, the trunk of which, about three feet above the ground, measures more than forty feet in circumference. The tree still possesses its noble crown of

leaves, and would perhaps live for centuries to come, if the partly hollow trunk had not been used as a kitchen during the Revolution, and the tree itself half consumed by fire. Every one who has been to Constantinople has seen the plane-trees of Buyukdere, called the Seven Brothers, hollowed by age and the fires of shepherds, yet still splendid and majestic. Near the temple of Apollo, at Bassæ, Stackelberg saw a plane-tree forty-eight feet in circumference, with its hollow stem turned into a sheep-fold. The author of "East and West," speaking of Stanchio in the Isle of Cos, says: "In front of the mosque stands a very ancient and magnificent plane-tree, thirty feet in circumference, surrounded and supported by antique marble and granite pillars, for which no more beautiful place of rest could be imagined." Prince Pückler said of the same tree: "My first walk was to the celebrated plane-tree, said to be the largest of the kind in the East. Its trunk only measures thirty-five feet in circumference, but its boughs cover the whole of the market-place of Stanchio. It is supported by marble columns, which were taken long ago from the temple of Æsculapius, and the tops of which are nearly all imbedded in the bark of the immense boughs, so that they are completely amalgamated with the tree. Two sarcophagi lying at the foot are used as water-troughs."

Near the cave-monastery of Megaspelæon in the Arcadian mountains stands the plane-tree on which St. Luke painted the miraculous picture of the Virgin; "within its hollow, but still living trunk," says Ulrichs, "is the little chapel of the Panagia Plataniotissa, roomy enough to hold ten persons." Mr. Dodwell, in his "Classical and Topographical Tour through Greece," says that the bazaars and market-places of most Greek towns are shaded by plane-trees, just as the Agora of Athens was planted by Cimon with trees of the same species. Some trees were so old and large that they were already the admiration of the ancients, for Theophrastus tells of a plane-tree near the aqueduct in the Lyceum at Athens, which, though young, had thrown out roots about twenty-five yards long. At Pharæ in Achaia, Pausanias saw plane-trees, on the banks of the river Pieros, of such dimensions that their hollow trunks could be used as a banqueting-hall or

sleeping-chamber; and at Kaphyæ in Arcadia he saw the tall and splendid Menelaïs, that is, the plane-tree of Menelaus, which the inhabitants said had been planted by that hero before he departed for Troy. Theophrastus thinks this tree was planted by Agamemnon, to whom also the plane-tree near the Castalian spring at Delphi is attributed. If we add to these the plane-tree of Helen mentioned by Theocritus, we see that legend loves to link this tree (which, as one of shade and enjoyment, always belongs to kings, and to the high and mighty in general) specially with the House of Pelops, as the line of rulers *par excellence.* In the Iliad, when the heroes, led by the Pelopidæ, prepare to depart from Aulis, they sacrifice beside a spring at the foot of a plane-tree, and in its boughs see the sign which Calchas interprets as signifying that the war will last ten years. The tree had been introduced into Greece from Asia, where the plane-tree, like the cypress, had for ages been an object of religious veneration to the tree-loving Iranians, and the West-Iranian races of Asia Minor. Herodotus has preserved for us a beautiful episode in the war undertaken by Xerxes against the Greeks. While on his way to Sardis in Lydia, the king saw a plane-tree, which so took his fancy that he adorned its branches with golden bracelets and chains, as a lover does his mistress, and set a watchman to guard it. Hamilton, travelling in that region, found the half-decayed trunk of the most gigantic plane-tree he had ever seen, and imagined it might be the very one admired by Xerxes. There also used to be shown the tall plane-tree on which Apollo hung his unfortunate rival Marsyas. Pliny describes one of the largest plane-trees as growing in Lycia, where it was no doubt sanctified by legend. It stood, as is always the case, near a spring, and the hollow in its trunk measured eighty-one feet, though the crown was still so verdant that it formed a roof impenetrable to the rays of the sun. The Roman consul Licinius Mutianus, who dined with eighteen guests in the hollow of this plane-tree, confessed that it was more beautiful than any of the gilded and marble halls of Rome. Homer only mentions the plane-tree once, and the passage is perhaps a later insertion, for the author of the splendid description of the poplar-shaded spring in Ithaca (Od. 17, 204) can scarcely have been acquainted with

the plane-tree. After Homer, we find the first notice of the plane-tree in the writings of Theognis, who mentions a grove of plane-trees in Laconia, standing near the cold spring from which the vine-dresser watered his vines. The plane-tree is not a native of Semitic countries, and could not therefore have been introduced into Greece by the Phœnicians. It is true that there was a supposed evergreen plane-tree at Gortyna in Crete, under which Jupiter was united to Europa; but the Phœnician cult of Europa at Gortyna must have been largely penetrated by Lycian and Carian elements. The plane-tree was held sacred by the Carians as well as the Syrians; Herodotus informs us that near Labraynda there was a sacred grove of plane-trees dedicated to the native Zeus Stratios, into which the Carians withdrew when beaten by the Persians (an Iranian feature in the otherwise Semitic character of the Carian religion).

Probably the true home of the plane-tree is the mountain ranges of the steppes of Western Asia, where the tree grows on the Taurus at a height of 5,000 feet above the sea. The Greek name of the tree, *platanistos*, *platanos*, proves that it came from a Phrygian, Lycian, or some other Iranian source, and not from the Semites; to a Phœnician product its Phœnician name would have adhered; but *platanistos*—the broad-leaved, the widely shading—was either formed within the Greek language itself (*platys*, broad, etc.), or, what seems more probable, it had a similar sound in the kindred Iranic idiom (Zendic *frath*, to spread, *perethu*, broad; and even the later Persic names of the tree, *dulb*, *dulbar*, and *tchinâr*, *tchanâl* have passed into the modern Semitic languages, showing their obligations to Iranian culture in this matter). A beautiful picture of the Oriental plane-tree is to be found in the edition of Marco Polo by H. Yule, London, 1871.

On the extension of the plane-tree to the west of Europe, we have the weighty evidence of Theophrastus: "The plane-tree is said not to exist in the regions about the Adriatic Sea, except round the temple of Diomed (on Diomed's Isle, now one of the Tremiti group, north of the Garganus promontory). It is said to be rare in Italy, although that country is not wanting in water; at

least the plane-trees planted by the elder Dionysius in his garden at Rhegium, which now stand in the gymnasium, do not thrive in spite of the utmost care." Pliny repeats all this, adding that the plane-tree was first planted on the grave of Diomed in the island called after that hero, then in Sicily, and was very early introduced into Italy. With the Roman nobility of the last days of the Republic it was a fashionable pastime to plant plane-trees amongst other expensive adornments of villas and gardens, while the common people preferred to plant fruit-trees, from which they could gather a crop. Fond of exclusive luxury, the aristocracy were pleased with the superstition that it was better to nourish the roots of the plane-tree with wine than with water; thus it is related of the celebrated orator Hortensius, that he once requested Cicero to take his turn in pleading at court, because he was obliged to go to his villa at Tusculum, in order with his own hands to moisten the roots of his plane-tree with wine. The great Cæsar, we are told in one of Martial's hymns, planted a plane-tree on the bank of the Guadalquivir; the growth of this tree, in the eyes of the poet, was an image of the imperishable glory of the Dictator and his house. In the Augustan poets, those hangers-on of the court, it is a favourite habit to sit in the thick shade of this aristocratic tree beside some cooling spring, and give themselves up to the enjoyment of repose and wine. Ovid calls the plane-tree *genialis*—that is, a tree that serves to nourish genius and heighten the enjoyment of life. But again, in true Roman fashion, conscience wakes up and protests against desecrating the holy ground, the teeming Earth, by planting a mere ornamental tree that does no one any good, much as children are forbidden to play with bread. Hence the epithets, "lonely, barren, bachelor," applied to it. "Soon," says Horace, "the fishponds will be bigger than the Lucrine Lake, and the bachelor plane drive out the elm,"—the latter being a wedded tree, for it supports the vine. "Who," asks Pliny, "would believe a tree had been fetched from the other end of the world for the sake of shade? Why, the plane has got as far as the Morini; it takes up some of their tributary soil, and they pay a tax for its shadow." It is hardly credible that the true plane-tree, the *Platanus*

orientalis, was planted on the Straits of Dover, and flourished there; it must have been a similar shady tree, perhaps the northern maple, *Acer platanoïdes*, called by Pliny himself the *Gallic* or white maple, for which tree there is a remarkably similar name running through the Celtic, Germanic, Slavic, and Thracian languages (note 66). It is generally believed that the American maple (*platanus Occidentalis*), which is now largely used in Central Europe for forming avenues, was brought from a still greater distance than the plane-tree of the ancients, and equally for the sake of its shade alone. Some consider it a mere variety of the Oriental plane-tree, but the first opinion is by far the most probable.

THE PINE TREE.

(PINUS PINEA.)

THE history of the Pine-tree is beset with difficulties, because the ancients, in mentioning the coniferous trees, do not carefully distinguish the various kinds, and have thus left a wide field open to conjecture. However, two groups of these trees can be distinguished with sufficient certainty: one, called "ĕlatē," is the *pinus pĭcea;* the other has the two names of "pitys" and "peukē," under which must be included the Pine, if it occurs at all. Homer was acquainted with all three names: his "ĕlatē" is a tall aspiring tree, with the epithets lofty, towering, heaven-high, therefore the Fir; but that his "pitys" meant the Pine, *pinus pīnea*, the tree with the elegant parasol-like roof and edible almond-like kernels, is by no means clear from the three, or rather two, passages in which the word occurs. In the Iliad we read:

> "Then, as the mountain oak, or poplar tall,
> Or pine (fit mast for some great admiral),
> Nods to the axe till, with a groaning sound,
> It sinks, and spreads its honours on the ground:
> Thus fell the king."

But here the adjective *blōthros* (up-shooting), and the association with oak and poplar, leads more naturally to the larch-fir, *Pinus laricio*, or to the *Pinus pĭcea*, elsewhere called "ĕlatē," than to the nut-bearing pine; thus Ulysses on Calypso's Isle builds his ship of elm, poplar, and fir (ĕlatē). And the same remarks apply to the second passage. As for "pitys" and "peukē," the fundamental meaning of both is that of pitch-tree, resin-tree. The different names may have been used in different localities for the

same species, or *vice versâ*, the same name for different kinds. Theophrastus says that what he called "peukē" the Arcadians called "pitys." Position, soil, climate, and age certainly produced varieties of the tree in those times as well as later. The detailed descriptions by Theophrastus in his "History of Plants" are not sufficiently clear to make a fixed terminology of the coniferæ possible in our sense of the word; and there is nothing to show whether the cultivated pine had its wild representatives in the Grecian mountains, or whether it was a foreign tree, and, in the latter case, whence it had come, and when.

If we turn for information to the fruit of the pine, we find that the name for the nuts in the cone was at first a general one, used for all kinds of pips and berries; but in later times it was confined to pine-kernels. In an Attic inscription, which perhaps belongs to the second century B.C., pine-cones are mentioned among other dainties, but we are not informed whether they grew in Greece or came from abroad, like dates and Egyptian beans. From these and other testimonies too complicated to mention here, it results that as we approach nearer to modern times the pine acquires a more distinct form; general names becomes more and more limited to this fruit, and the latter appears more frequently as a delicacy of common life. The comic poets of Athens never mention the *pignoli*, or pine-nuts. Theocritus speaks of pine-nuts as being a favourite dainty in Sicily; he describes a pleasant resting-place, where fountains spring, birds twitter, the trees spread a cool shade, and the pines drop their nuts; and, in fact, when the cone has hung four years on the tree, the scales open naturally and allow the nuts to fall out, which then only require to be cracked open. Cato speaks of the pine in continental Italy, giving instructions how to sow the kernels. Pliny begins his enumeration of tree-fruits with four sorts of edible cone-kernels, belonging to four different kinds of trees, among which are the *Pĭcea sativa*, and the pinaster or wild pine, the nuts of which the Taurini boiled with honey, and called the mixture *aquicelos*. When the younger Pliny, in his celebrated second letter to Tacitus, compares the smoke issuing from Vesuvius to a *pinus*, we at once recognise our pine with its umbrella-like crown resting on a tall and slender

shaft. The pine is not forgotten by the poets in their descriptions of rural paradises; it was not a forest, but a garden tree, therefore most certainly of foreign origin: *pinus in hortis* (Virgil), *culta pinus* (Ovid). Petronius uses words that distinctly paints its bare, tapering trunk, and its rocking, rustling roof. Martial warns the traveller not to rest beneath a pine-tree, lest its heavy cones fall upon his head. The pine-tree neither climbs high mountains nor wanders far from the promontories and shores of the Mediterranean Sea; another proof that it was foreign to both Italy and Greece, for the indigenous growths of those countries, where the cutting north wind is still felt, have strength enough, when assisted by cultivation, to surmount the Alps and find a footing in favourable localities of Central Europe. But even the neighbourhood of Turin is already too cold for the pine-tree. We do not know whether and in what part of Asia it may still be found in a wild state. Fiedler says it is rarely found in modern Greece, and then generally in solitary examples. The pine-nuts sold in the large bazaars usually come from Russia, and are the fruit of the *Pinus cembra.* According to Grisebach, the pine, mixed with larches, grows in forests on the northern shore of the peninsula of Hagion-Oros (which terminates in Mount Athos). In modern Italy the pine-tree forms the picturesque adornment of most villas and gardens, for example, in Rome. It has lately been extensively planted in the rich Campagna of Naples, above which, far and wide, rise its charming mushroom-shaped crowns of tufted branches. Now and then it is met with in denser groups, but nowhere so continuous as in the celebrated *Pineta* of Ravenna. This famous pine-forest to which Ravenna, though surrounded by marshes, owes its salubrious air, stretches for more than six geographical miles along the shore, with a breadth of about a league, standing on a former sea-bottom. It is well described by Karl Witte: "Instead of the uniformity of a swaying baldachin, in which form we are accustomed to see the pine, we here find many hundreds of grand old trees with the strangest and most curiously twisted branches; and below their verdant roof a luxuriant growth of shrubs and creepers covers the damp and fertile ground in wonderful variety. An author of the last century counted almost

three hundred kinds of plants in this Pineta; and amongst them sing and chirp and buzz innumerable birds and other winged creatures; while, far above, the breeze from the neighbouring sea whispers unceasingly through the branches of the pines." This Pineta annually yields about nine thousand bushels of pine-kernels, while the empty resinous cones afford the best material for hearth-fires. Now, as this forest for the greater part stands upon newly formed land, which was still sea at the time of the Romans, it can only have been planted during the Middle Ages, certainly not before the time of Procopius. But the whole territory was no doubt rich in pines at an earlier time. Faenza, not far from Ravenna, possessed cultivated pines, which towered above the sown fields, in the days of Silius Italicus. We do not, however, believe that Augustus chose Ravenna as one of the two stations for his fleet because of the existence of this tree, for a naval station and a dockyard are two very different things, the choice of the former depending on military and political reasons. At the time of the Gothic invasion there already existed a place called Pineta, near Ravenna, which however seems to have been situated to the north-west of that city, not where the modern pine forest stands. The latter was planted to protect Ravenna against the encroachments of the sea, at a time when the whole of North Italy was engaged in a struggle against nature by means of canals, dams, and other marvels of technical skill. Dante saw the forest and admired it; he calls it that of Chiassi (*classis*, *i.e.*, the old harbour of Ravenna), and Boccaccio does the same. It was once the property of several churches and monasteries, and afterwards, until Italy was united, formed one of the estates of the Apostolic exchequer; the latter, in the year 1860, ceded it by treaty, or the semblance of a treaty, to the canons of St. John Lateran, who in their turn transferred their rights to a private person. Both contracts were declared null and void by the Italian courts, because the sovereignty of Italy having changed, the papal exchequer could no longer be regarded as a proprietor. However, the Italian Government condescended to sign an agreement, by virtue of which, for a relatively moderate sum, it took possession of the Pineta, the capital of which is valued at four to five

million francs. The citizens of Ravenna, according to an ancient custom, have still extensive rights of use in the forest, and it has been complained that the easy means of livelihood it affords encourages idleness and attracts all sorts of vagabonds from far and near. Notwithstanding, the Pineta is still considered the palladium of Ravenna, shielding the city and the district from poisonous exhalations and the tides of the sea, and is valued and cherished accordingly.

THE CANE.

(ARUNDO DONAX.)

It is a surprise to the northern traveller when, after crossing the Alps, he first comes in sight of a waving, rustling cane-field, the knotty hollow tubes of which, clothed with leaves, are often an inch thick or even more, and reach far above his head. The root bulbs, the *oculi* of the ancients, are laid in deep trenches, in damp fat soil, alongside the dams, on the banks of rivers and canals, but also sometimes in dry fields; in autumn the canes which have sprung up are cut short, and the stumps remaining are burnt, the ashes being left to manure the earth for the new growth of the following year. One may frequently see from elevated points—for example during an evening walk on one of the Seven Hills of Rome—fire and smoke flickering and wreathing above the level plains. This giant grass is not only a substitute for fire-wood in the forestless south, but is used to prop vines, to hedge fields and gardens, to form arbours, railings, and the frame-work of plaster ceilings; the canes serve instead of ropes for hanging wet linen on to dry; they are made into fishing-rods, into weaving-spools, and a hundred other objects. In modern as in ancient times the shepherdess uses a piece of cane for a spindle, which is light and easy to carry as she follows her kids and lambs up the rocky path; and the shepherd boy, now as then, cuts from the smooth cane his shrilly pipe, the *tibia*, *fistula*, or *syrinx*. Southern people no longer write with a reed, but an inkstand is still called *calamajo*, as the magnet is called *calamita*, and the crisping-pin *calamistro*, and boys ride about on a long cane just as they did in the days of Horace. This cultivated plant, which must not be mistaken

for the European marsh reed, *Phragmites communis*, originated in warmer Asia, and even now never leaves the neighbourhood of the Mediterranean. Already in the Homeric age the Phœnicians brought to Italy many articles made of the *Arundo donax*. As we infer from several words that occur in the language of the Epics, the word *kannē*, originally *kanē*, which was derived from the Semitic, and which the Romans borrowed from the Greeks (*canna*, formerly *cana*, as is proved by *canalis*), produced the Homeric *kaneon*, *kaneion*, bread-basket, and *kanōn*, weaver's spool, also the cross-bar of a shield, which served either to secure the handle or to stretch the shield itself. The basket, found also later in the extended form, *kanastron*, *kanistron*, out of which bread was served to the guests, was woven of split canes, and therefore probably an article of Phœnician trade. The *kanones* of a shield had to be both light and strong, and these two leading qualities of a good shield were found united in the Asiatic cane. The balance used by the ancient merchants when they spread out their wares on the seashore was no doubt an evenly poised cane (note 67); a straight cane formed the measure and the ruler, for we find *kanōn* afterwards used in both these senses [even now the populace of Naples prefer to measure by the *canna* rather than by the metre].

The Cyclopean walls of Mycenæ were hewn with chisel and measured with a *phoinix kanōn* (reddened cord), which, drawn tight and snapped, left a straight red line on the stone. We very early read (in a fragment by Hipponax) of mats and covers made from the *kanna*. That Greek word is rarely found in antiquity, and when it is, means not the plant itself, but some object made out of it. We must therefore inquire when the cane was brought to Greece, and to what extent it was planted there. The reedy thicket in the Odyssey, in which Menelaus and Ulysses lay in ambush, may have consisted of the common marsh-reed; but the arrow with which Paris wounded Eurypylus in the thigh must have been made of the Asiatic cane, for in this case the shaft had to be both strong and light; these arrows, however, may have been an imported article, and of foreign material. The careful description given by Theophrastus of the different kinds of canes

is not precise enough; we cannot recognise in it with any certainty the *Arundo donax.* But when he finally says that all canes grew better when the old stumps were burnt, he must have been thinking of cultivated canes. Dioscorides more clearly describes the true Asiatic cane when he says: "One kind of cane is thick and hollow, it grows near rivers, and is called *dŏnax*, and by some persons *Cyprian* cane"— therefore it must have been brought from the latter island. Another intermediate station may have been the island of Crete, whose inhabitants were called by Pindar *Toxophoroi*, and were celebrated through all antiquity for their arrows. No place in Greece proper was better fitted to receive the foreign cane than the shores of Lake Copaïs in Bœotia and of the rivers that flow into it; a district which was open to Eastern influences at an early period. The flute-reed, *kalamos auletikos*, which grew there later, can only have been the *Arundo donax*, of which even now the Greek shepherds make their syrinxes. Perhaps the Sicilian canes, with which Dionysius the elder set the Achradinian gate of Syracuse on fire, had been cultivated by man—for the *Arundo donax* still grows luxuriantly on the banks of the Anapus. Cato gives directions for planting an *arundinetum* in damp spots and on the shores of rivers; so do his successors, Varro, Columella, Pliny, etc.; and these methods, such as the planting of the root-stocks, the burning, the use of the canes for hurdles, for building houses, for supporting vines, and so on, are in practice at the present day. But as in Greece, so in Italy the word *canna* was a late arrival, and was indeed the name for the thinner and weaker common cane in contrast to the true *arundo.* The oldest author who uses it seems to be Vitruvius, who gives instructions how to nail *cannæ* to the walls as a ground-work for the plaster or stucco. Ovid, who has a liking for the word *canna*, distinguishes the smaller *canna* from the long *arundo;* and Columella expressly says that the common people called the degenerated cane *canna*, and believed that by age the fibres grow so close that "the stalks get thinner, like those of the *canna.*" Vitruvius, above quoted, advises people to make use of the thinner marsh-cane if the *Arundo Græca* be not at hand; thus calling the *Arundo donax* after the country from which it came. And finally,

in the latest Imperial age, Palladius uses *canna* as the common expression for the reed in general. That the word was used in Italy long before Vitruvius is shown by the above-mentioned derivative *canalis;* and the celebrated town of Cannæ on the Aufidus in Apulia took its name, no doubt, from the canes growing there, as did also the Æolian town of *Kanai* in Asia Minor. The modern European languages possess numberless further derivatives and applications of the word: *can*, *channel*, *canon* (in both senses), *cannon*, *canister*, *knaster;* in German, *kanne*, *kannengiesser* (pewterer, alehouse politician), *kaneel* (cinnamon); in French, *chanoine*, *chéneau* (gutter), etc., all of which may finally be traced to the Hebrew *kaneh*, or its Phœnician representative.

THE PAPYRUS.

THE *Papyrus-plant*, one of the Cyperacea, or half-grasses, and therefore only half related to the *Arundo donax*, excels the latter in beauty and ancient fame. No one who has visited old Syracuse in Sicily needs to be told that this plant has found its way even into Europe. Near Syracuse is a small branch of the Anapus, leading up to the fabulous spring of Cyane (now *Testa di Pisima*), and bordered on each side with papyrus, which rises straight out of the shallow, clear, slowly-running water. In one particular place, where the little river widens into a lake-like basin, the so-called *Camerone*, the scene becomes fairy-like and truly tropical; the tall canes, from twelve to sixteen or eighteen feet high, with their graceful feathery tops, encloses on every side like a thicket the liquid mirror, on which their shadows peacefully float, and at which their roots and stems are ever drinking. In ancient Egypt, as every one knows, this plant grew in enormous quantities, and was used in various ways; the roots for food, the bast for ropes, baskets, mats, and river-boats; the fine skins for writing paper. The Greeks procured their byblos-material from the Valley of the Nile, and called their books, writings, and letters, "bibles," after it. It is very remarkable that the papyrus is now quite extinct in Egypt (for though some travellers profess to have seen it there, they probably mistook some other plant for it), and is only found again—and then in vast quantities—on the White Nile and the Gazelle. The papyrus disappeared from Egypt—where it was probably an exotic introduced from the countries higher up—and therein it shared the fate of the Egyptian bean, "Kyamos Aigyptios" (*Nymphæa nelumbo*), so often mentioned by ancient writers—a proof that culture, as it enriches a country or a whole hemisphere, will under

altered circumstances withdraw its gift. To both plants the competition of other plants and of new inventions proved fatal; they were supplanted by parchment and rag-paper, by hemp and spart-grass, by fruits containing more farina, etc. In Greece itself there has never been found a trace of a papyrus plantation, which made the presence of the plant in Sicily the more mysterious, till the Florentine botanist P. Parlatore cleared up the history of the Sicilian papyrus. Parlatore first distinguishes between two species of the plant: the old Egyptian papyrus, still found in mummies, and still living in Nubia and Abyssinia, which he calls *Cyperus papyrus;* and the Sicilian papyrus, growing much taller, spreading at the top into a plume and not into a cup; which was a native of Syria, and to which therefore he gives the name of *Cyperus Syriacus.* This distinction does not help us much, for Syria, after all, acquired its papyrus only by transplantation from Egypt; and it is a historical fact that the ancients knew nothing of the papyrus plant in Sicily, so that it could not have existed in that island. It must have been the Arabs that brought it from Syria shortly before the beginning of the 10th century. Ibn Hauqal, who wrote in 977–8, is the first writer that mentions it. It was probably planted first on the little river near Palermo, which was called Papireto after it; there it grew abundantly till the year 1591, when the then Viceroy caused the whole district to be drained because of the malaria bred by the Papireto, and the papyrus grove was of course destroyed. But even now the place is called *piano del papireto*, and the papyrus is still cultivated in the public gardens there. At Syracuse it must have been planted about the middle of the seventeenth century, for a trustworthy author of the year 1624 is ignorant of its existence, while another of 1674 is aware of it. It is now found here and there growing wild in the southern and eastern parts of the island, and is a favourite ornament in the gardens of the rich aristocracy. All the specimens in European hothouses seem to have been procured from Sicily. If the Arabs had extended their dominion to Greece, and founded a brilliant court there, as they did at Palermo, this graceful ornament of river-banks would probably meet our eye in some of the waters of that warm country so much nearer to Syria, as it did once on the Papireto, and does now on the Anapo.

CUCURBITACEOUS PLANTS.

THE fruits of this family, which are among the giants of the vegetable kingdom, have all come from Asia, and most of them from South Asia, especially India. Once spread in several varieties throughout the countries of the ancient civilized world, they are still the favourites of Southern and particularly of Eastern nations. Protected by a thick rind, which prevents the evaporation of the internal moisture, they collect during the withering heats of summer a quantity of ever-cold juice, by which the thirsty eater is refreshed. The quantity and flavour of the fruit are very different, according to the species: sometimes the flesh almost melts into water, and drops from hand and mouth while being eaten, like the Oriental water-melon; sometimes it forms a sweet, aromatic mass, as in the sugar-melon. While the above-named kinds are eaten ripe after taking out the seeds, the cucumber species are now only eaten in an unripe condition and with the seeds, or sometimes pickled; the pumpkin alone is never raw, but always cooked. The feeble stems bear no sort of proportion to the often enormous size of the fruit, which lies still on the ground, gradually swelling and awaiting its maturity; it cannot, like the cocoa-nut or any other tree-fruit, hang temptingly on high, and fall when ripe, that its seeds may be cast around. All this already amazed the ancients. Matronius, the merry parodist, called the pumpkin "Son of holy Earth," an epithet used before by Homer for the Titan, Tityos; and if Homer's Titan, when he lay on the ground, covered nine *plethra*, Matronius's pumpkin, lying in the garden, was as long as nine tables in a row. Callimachus talks of the pumpkin growing and growing on its dewy bed, and Heraklides calls it "earth-loving;" while Virgil describes the serpent cucumber

coiling through the grass and swelling into belly-shape. In no other plant are so many variations, degenerations, and transformations observed as in the cucurbitaceæ. The reason perhaps lies in their excessive and therefore easily diverted creative power, which is also the cause of the astonishing size of some of these fruits. As even in ancient times the boundary-lines between species were very undecided, and the names in common use sometimes meant one kind, sometimes another, it is very difficult, or even impossible, to make the ancient accounts agree with our present knowledge of the subject, or to decide in any given case whether a melon, a pumpkin, or a cucumber was meant, and if so, which kind.

The oldest testimony to the existence of the gourd-kind in the East, or rather in Egypt, is to be found in Numbers xi. 5. There the Israelites, wandering through the arid desert, long for the fruits they have left behind in Egypt: "We remember the fish which we did eat in Egypt freely; the cucumbers, and the melons," etc. By the cucumber is most likely meant the Egyptian *cucumis Chate*, a large oval fruit, still commonly eaten under that name in the Levant, after it has ripened, and acquired something of the melon in taste and effect. At the same time, it is possible that since those early days some names have been shifted from one kind to another, among Syrians, Arabs, and Jews, and remained the same while one species vanished and another appeared. In the epic poetry of Homer and Hesiod there is neither a name for this fruit, nor an allusion that could lead us to suppose any knowledge of it. A hint might be found in the name of Sicyon, that is, cucumber-town, but it does not belong to a very ancient period. The fruit is mentioned twice in the Iliad, but only in passages that are later insertions. The former name of Sicyon was Mēkonē, the poppy-town, and so it is called in Hesiod's works; legend calls the father of Sikyon "Marathon," the fennel-man. According to that, the fruitful plain of Sicyon, along the lower course of the Asopus, first produced the *poppy* (a very ancient weed, with a beautiful flower and edible seed, which had come over from Asia in company with grain), and *fennel* (a native umbelliferous plant, whose spicy qualities had been early discovered by the inhabi-

tants, and highly valued ever since), and then at last the cucumber or pumpkin brought over the sea from the East, from which latter culture the town on being re-founded received a new name. But for the long and sad gap in Grecian literature that separates the old epics from Pindar and Æschylus, we should perhaps be able to fix precisely the epoch at which the Greeks of Asia Minor and the Greeks of the European mother-land began to cultivate cucumbers and pumpkins. But neither the works of the elegiac and lyric poets, nor those of Archilochus, the "second Homer," have come down to us, though they still existed in Christian times, and only fell victims to the destructive zeal of the Church and her bishops. We know by accident that Alcæus once used the word *sikys*, which, among other meanings, has that of cucumber; the plant, therefore, existed at the time of Alcæus. But what did the poet mean by *sikys?* That word, as we believe, is but another form of *sûkon*, a fig; as in the fig, so in the cucumber and pumpkin, the *Prægnans cucurbita*, it was the exuberance of reproductive power, the wealth of seed, that arrested the attention of the child of nature. Later on, a distinctive name was found for the Pumpkin, *kolokyntha*, *kolokentē*, of which Aristotle's pupil Phanias says the fruit was uneatable except when boiled or fried, which can only apply to the pumpkin. The idea at the bottom of the name is analogous to that in *sikys*, *sikyos*, namely that of colossal size: *kolok-yntē*, from *kolossos* (*i.e.*, *kolokios*), and we find the same word in the surname of the Sicyonian Athena, *Kolokasia*, the pumpkin goddess. The saying, "Healthier than a pumpkin," used by Epicharmus, points to the same idea; as well as another, "Within seven days I'll set him before you, either as a cucumber or as a lily:" that is, alive or dead. That the pumpkin was something new and extraordinary, not fitting into the known order of nature, is seen from the laughable disputation of the Academic philosophers in the Gymnasium, as described by the comic poet Epicrates: it is asked, what sort of a plant is the pumpkin? the thinkers bend their heads in deep meditation; suddenly one says it is a round vegetable, another that it is a herb, another a sort of tree—on which they are rudely interrupted by a Sicilian physician present, after which Plato con-

tinues the inquiry with undisturbed gravity. But specially noteworthy is the fact that the *kolokyntē*, even at a late period, is now and then called *Indikē*, the Indian fruit, with the express addition that it is so called because it came from India.—A third, and still later name, *pepōn*, is really the adjective *ripe* (the noun *sikyos* being understood), meaning a fruit that must be mature before it can be eaten. This name therefore excluded such cucumbers as were eaten in the first tender stage of their growth, while the other kinds that with ripeness attained a melon-like sweetness, and were eaten fresh from the garden, might also be called *pepones*.

All these passages, and many others not mentioned, from ancient authors, may equally apply to cucumber and to pumpkin, while not one can with certainty be applied to the real Melon. In none of them are the honey sweetness (boiled melon-juice is still used by the Orientals instead of sugar), the melting pulp, the golden or delicate white colour, the ambrosial odour, mentioned. It is only during the later period of the Roman Empire that we find the *melo* reckoned among delicacies; in which *melo* we recognize without difficulty our sugar-melon. Pliny relates that in Campania there arose accidentally a cucumber of the nature and golden colour of the quince, which was then propagated by sowing the seeds; that the wonderful thing about these *melo-pepones*, besides their shape and odour, was that, as soon as they were ripe, they detached themselves from the stalk. Here, for the first time, we hear of the *odour* of this fruit; its Greek name (from *mēlon*, quince) originated in Grecian Campania; and afterwards, when the fruit became generally known, was popularly shortened into *melo*. No one will believe that the melon was produced from the cucumber in Campania by a freak of nature; whence, then, did it come? Alphonse Decandolle, in his "Géographie Botanique," says the melon was originally a product of Tartary and the Caucasus. By Tartary he probably meant only ancient Bactria and Sogdiana, the oases on the Oxus and Jaxartes; and thence the fruit may have been brought to the gardens of Naples in the course of the first Christian century. We have no positive historical notice of the latter fact, but this kind of fruit is very easily carried to the most distant regions by means of the seed, and the first attempts may

have passed unobserved or been forgotten. Marco Polo says of the country west of Balkh: "Here grow the best melons in the world. They are cut into round slices and dried in the sun. Thus dried they are sweeter than honey, and are exported to all countries." Vámbéry praises the melons of Khiva: "Khiva has no rival in melons, either in Asia or in the whole world. No European can imagine the sweet aromatic odour of this delicious fruit. It melts in the mouth, and, eaten with bread, is the most pleasant and refreshing food ever afforded by nature." Persia, too, is an excellent country for melons; there grow the finest sorts, which are treated with great care and highly valued. The varieties are innumerable, changing from village to village, and among them are some of wide and well-deserved fame. "Melons," says E. Polak, "are among the most important necessaries of life in the Persian towns; in the price-tariffs they are mentioned next after bread, rice, meat, cheese, butter, and ice. They are so sweet that a Persian laughs at the idea of Europeans eating their melons with sugar." All this speaks in favour of the sugar-melon being there an indigenous fruit; but, as Polak adds, they are dangerous food for a foreigner, and sometimes also for the natives, who do not escape the consequences of indulging in them too freely.

The Latin names for the cucumber and pumpkin, *cucumis* and *cucurbita*, reflect by the Reduplication (cu-cu) the impression of exuberant growth made on the popular mind by these fruits; at the same time, *cucurbita* is so similar to *corbis*, a basket, vessel, *corbita*, a ship of burden, and *corbitare*, to lade; and also *cucumis* (Genit. *cucumeris*) to *cumera*, *cumerum*, a covered vessel; that it is not easy to reject the connexion. The rind of the gourd or pumpkin has from time immemorial been used as a vessel, and is still so used under the name of calabash; may it not be that the inhabitants of the Italian coast first beheld these green rinds *as vessels* in the hands of foreign sailors, before they had an opportunity of eating the fruit themselves, and afterwards even planting it? We learn from Pliny that pumpkin-*bottles* were used to keep wine in.

During the early Middle Ages there appeared in Byzantium a

new name for the cucumber which had come from the East, and in course of time spread from nation to nation all through Europe. This was a Persic-Aramaic word, *angourion*, and seems to have been applied to those sorts of cucumber that we now use for salads and pickling. The cucumbers of antiquity seem to have been a large kind, no longer cultivated in Europe, eaten as a refreshment, and also boiled or baked according to its stage of maturity. From Byzantium the cucumber, as the name proves, reached the Slavs (Russ. *ogurèts*, *ogúrka*, Pol. *ogórek*, etc.), and became a favourite and common food of all the nations of that race, as well as of the neighbouring Tartars and Mongols. The Great and Little Russian cannot live without cucumbers; he eats them salted through the winter, and with their help endures the long and strict fasts of the Eastern Church. From the Slavs the *agurke*, later shortened to *gurke*, came to the Germans, but only in quite recent times, for the name can only be traced back to the seventeenth century. It is an interesting ethnographical fact that the so-called "saure gurke," or salted cucumber, has only become common in those parts of Germany which were formerly inhabited by Slavs, and which afterwards became Germanized. Besides this, it is said that the small, greenish, well-tasting Slavonian cucumber, common all over Russia, degenerates when transplanted to Germany; it seems, therefore, to need an extreme climate.

The juicy Water-melon (*Cucumis citrullus*) is likewise a plant first known in the Middle Ages, for it cannot be proved that it is the *pepo* of the ancients, as many believe. In Italian it bears the Byzantine name *anguria* (in some districts *cocomero*, from cucumis), in French the Arabic name *pastèque*. South of the Alps it is greatly valued because of its refreshing qualities during the summer heat, and everywhere one sees this fruit cut in halves, with its blood-red pulp and black seeds, piled up in the markets or at the corners of streets; and the tables where it is sold in slices for a small copper coin, are surrounded with a thirsty crowd of workmen, soldiers, and others. It ripens in August, just when the heat is greatest, and the drier and hotter the season has been, the sweeter and juicier it is.

But it is far more important in the East, and among the half-

Orientals in South-eastern Europe. There the glowing summer and keen air are highly favourable to this annual. It is cultivated in large fields, and sent to the towns at the proper time by waggon loads. The water-melon is found throughout Western Asia, Persia, and the countries of the Caucasus to the Lower Danube, Hungary, and Wallachia, but particularly in the rich and dry plains of South Russia and the neighbouring half-steppe, half-garden lands of Asia. For at least two months in the year the Russian inhabitant of the steppes lives entirely upon *arbûzes*—such is the Tartar-Slavic name of the fruit—and a little bread. When the northern traveller in his clumsy "tarantas" has gradually approached that region, one look at the melon-fields and the tall sunflowers (*Helianthus annuus*) which generally stand beside them, and whose seeds yield a favourite oil, assures him that he has crossed the threshold of the East. In the countries of the Caucasus, so rich in splendid fruits, in grapes and nuts, the natives, be they of what race they may, generally despise all other delicacies as compared with the juice of the water-melon, which tastes to us like cucumber water slightly sweetened. The Mod. Persic name *hindevâne*, "Indian fruit," throws a clear light on the home of the fruit, and the Tartar name *kharpuz*, *karpus*, taken with the modern Greek *karpousia* and the Slavic *arbûz*, tells us whence it came to the Greeks, Russians, and Poles. (A similar change is seen in the Greek *osteon* and Slav. *kostĭ*, in *Hypanis* and *Kuban*, and in the Alanic name *Aspar* and German *Gaspar*, *Caspar*.) So the water-melon migrated to Persia when communication with India was newly opened, either during the Arabian or Mongolian dominion; to Greece in company with the Turk, to Russia from the Tartar kingdoms of Astrakhan and Kazan; while its propagators in Little Russia were probably the Cossacks of the Dnieper. The Polish name for water-melon, *kawon*, is also an Oriental word. The old Slavic name of the pumpkin, *tykva*, we have already connected (*see* art. FIG) with the Greek *sikua*, and the Polish *banya* (water-melon) seems to be the same as *banya* (vessel, bath), a terminology quite analogous to the ancient Greek and Roman. The German words *kürbiss*, *pfebe*, *melone*, come from Latin, as the fruits they designate came from Italy; not from Hungary therefore, or the Byzantine Empire.

THE DOMESTIC FOWL.

THE domestic fowl made its appearance in Western Asia and in Europe much later than one would imagine. The civilized Semitic races cannot have been acquainted with the fowl, for it is nowhere mentioned in the Old Testament. It is never seen on Egyptian monuments, otherwise so full of the details of ancient housekeeping on the Nile. There we see flocks of tame geese being driven home from the pasture, we see them and their eggs being carefully counted, but nowhere cocks and hens; and when Aristotle and Diodorus say that eggs were artificially hatched in Egypt by burying them in dung, they must mean the eggs of geese and ducks, or refer to a period later than the Persian conquest, which Diodorus seems to hint, for he commences his account of the hatching ovens with the words: "The Egyptians inherited many customs relating to the breeding and rearing of animals from their forefathers, but other things they have invented, among which the most wonderful is the artificial hatching of eggs." The domestic fowl is aboriginal in India, where its supposed parent species, the Bankiva fowl, still exists from Further India and the Indian islands to Cashmere. The domestic fowl first migrated to the West with the Medo-Persian invaders. In a work on the Temple of the Samian Hera, Menodotus says that as the cock spread from Persis, so the sacred peacock spread from the Temple of Hera to the surrounding districts. In the religion of Zoroaster the dog and the cock were sacred animals; the first as the faithful guardian of house and flocks, the second as the herald of dawn and the symbol of light and the sun.

The cock is specially dedicated to Craosha, the heavenly watchman, who, awakened by fire, awakens the cock in his turn; he by

his crowing drives away the *daêvas*, evil spirits of darkness, particularly the yellow, long-fingered Bûshyãçta, the demon of sleep. In the 18th Fargard of the Vendîdâd we read: "Then answered Ahura-mazda, 'The bird that bears the name of Parôdars, O holy Zarathustra, but upon whom evil-speaking men inflict the name of Kahrkatâç, this bird raises his voice at each divine dawn.'" So that Ormuzd himself had commended the bird to Zoroaster. A passage in the Bundehesh runs: "Halka the cock is the enemy of the Devs and Magicians. He assists the dog, as it is written in the law. Among the earthly creatures that plague Daruj, the cock and the dog unite their strength. He shall keep watch over the world, even as if there were no dog to protect the flocks (or houses). When the dog and the cock fight with Daruj, they weaken him, who else would torment men and animals. Therefore it is said, By him (the cock) shall all the enemies of goodness be overcome; his voice scatters the evil." Wherever a Persian settled, he took as much care to procure a cock as to pray and wash before and during sunrise. As far as the limits of the Persian dominion reached, there, no doubt, the tame and useful, easily transported, and at the same time so peculiar creature, found a welcome in the households even of non-believers. On the so-called Harpies' monument from the Acropolis of Xanthus in Lycia (now in London) there is the figure of a god to whom a cock is brought as a gift or as a sacrifice. If this monument, as archæologists suppose, really belongs to a period before the taking of Xanthus by the Persians, then the Lycians must indeed have been acquainted with the cock before the spread of the Persian dominion. But the archaic style of the scenes represented, though in Greece it might point to a more or less fixed epoch, has no decided chronological value as regards Lycia, for we are ignorant of the development of art in that country. The Acropolis was burned down by the inhabitants themselves before the city was taken by the Persians, and no doubt the monuments were also destroyed. That such a monument could not be erected during the Persian rule, which was only a kind of suzerainty, and left the Lycians in comparative independence, is an assertion that has no foundation. If the domestic fowl had been familiar to the Lycians long before

the Persian time, the Greeks must have shared in the knowledge; but neither in the works of Homer and Hesiod, nor in the fragments of the elder poets, is there any trace of cock or hen. Surely, among people who had no clocks, the prophet that proclaimed the hours by night, the proudly strutting, winking, crowing Sir Chanticleer, the supremely jealous sultan (*salax gallus*) surrounded by his harem, the hot vainglorious champion armed with his comb, tassels, and spurs, and Dame Partlet announcing to the world with a chuckle her last achievement: all this merry parody of a human family and aristocratic manners could not fail to be a frequent subject of description and comparison, had the poets had any opportunity of observing it. It did not escape even the ancients, that Homer, though he used the proper names Alektor and Alektryon, seemed to know nothing of the fowl so-called.

The oldest mention of the cock is in Theognis, who wrote in the latter half of the sixth century B.C., and no doubt lived to witness the conquest of the Ionians by Harpagus, and the occupation of Samos by the Persians. But the mixture of so much that is spurious in our collection of his poems makes them no very safe foundation to build chronology upon. As for the "Battle of Frogs and Mice," in which the cock is mentioned, both the condition of the text and the probably late origin of the work make it still less possible to draw from it any conclusion. If, as Pliny relates, the celebrated athlete Milo of Croton really made use of the *gemma alectoria*, *i.e.*, the jewel found in the stomach of a cock, as an amulet which enabled him to conquer his opponents, the period would agree with that of Theognis; but this legend was only applied to Milo by later authors. However, in the writings of Epicharmus, who flourished during the Persian wars, and in those of Simonides, Æschylus, and Pindar, we find the cock already mentioned under the proud name of *alektor* as the usual companion of man. Poets pretty early compare the quarrels of men to the fights between cocks inhabiting the same yard. In the "Eumenides" of Æschylus, Athena warns the Athenians against civil war as resembling the combats of cocks. Pindar compares the inglorious victories of civil war to the victories of a barn-door fowl. Themistocles is said to have raised the courage

of his army by reminding them how two fighting cocks risk their lives, not for the hearth and its penates, but for fame alone. When afterwards the public cock-fights, which are represented on innumerable ancient monuments, were supposed to be derived from the above speech of Themistocles, it proves at least that cock-fighting was not thought of as older than the Persian wars. The comic poets still call the cock the *Persian* bird. In the "Birds" of Aristophanes he goes by the comical name of *Medos*, the Mede, and Peithetairos wonders how, being a Mede, he could have got there without his camel. In two respective passages written by the tragic poet Ion, a flute in the form of a cock chants the Lydian song, and the shepherd's pipe is called the Cock of Mount Ida.—But whence came the word *alektor*, *alektryon*, which bears such an eminently Greek stamp? It must have arisen, or rather been invented (perhaps as an adaptation of the Iranic *halka*, *alka*), in Ionia, when the cities there, on the overthrow of Crœsus, fell into Persian hands, and opened their gates not only to the garrisons, but to the religion of the victors and to their sacred animals. The wonderful, light-announcing bird of the sun, which bore the priestly name of *parôdars*, was called—at a time that was awaking out of the dreams of myth, and beginning to rebel against epic legend and epic language—by the equally mystic and significant name of *alektor*. Such names as *ēlektor Hyperion* (the radiant traveller, the sun), *ēlektron* (shining metal, sun-coloured amber), *Elektra* (goddess of the shining, watery mirror), *Elektryon* (the son of Perseus, the Elektrian islands, the Elektrian gate at Thebes, etc.), and also the forms with *a*, *Alektryon*, *Alektor*, were familiar to every educated and pious man from Homer and the heroic mythus; and Empedocles, in a verse enumerating the elements, calls fire *ēlektor*. It is true that afterwards, when the original meaning of the old word was generally forgotten, it was commonly derived from *lektron*, a bed, either with *a-* copulative, giving the sense of *bed-fellow*, or with *a-* privative, meaning the *bed-less*, unsleeping one, which seemed very suitable for a cock. But the appearance of the new name in the two forms *alektor* and *alektryon*—the first reserved for poetic, the other given up to every-day use—is a telling proof that it was formed on the model of

those mythic hero-names. Again, the fact that as late as Aristophanes there was no settled form for the feminine, so that he makes fun of those who called a hen *alektryaina*, speaks strongly for the novelty both of the name and of the thing. In this animal, of all others, a clear distinction between the two sexes was an imperative necessity; it was Aristotle that first used the feminine form *alektoris*, but in the generic sense of "fowl." As the cock first appeared at a late period, when mythic production was just dying out, it could never attain any prominent religious importance. As a fighting-cock it was naturally sacred to Ares and to Pallas Athena. Plutarch relates that at Sparta, on the close of a campaign, two kinds of sacrifice were in use: he who had attained his end by craft and persuasion sacrificed a bullock; he who had gained it by fighting, a cock. At Olympia the figure of a cock from the hand of Onatas, announcing or signifying the sun, was to be seen on the shield of Idomeneus, who was the grandson of Pasiphaē, and therefore a descendant of the Sun-god. Plutarch speaks of an image of Apollo with a cock perched on one hand, the symbol of the God of the Sun. On the coins of Phæstus in Crete may be seen the figure of a youthful god, evidently a personification of the sun, holding with his right hand a cock which sits in his lap. Plato's Phædo has taught every one that the cock was sacrificed to Asklepios the God of Healing. A superstition peculiar to the rocky town of Methana, between Epidauros and Trœzen, mentioned by Pausanias, is likewise connected with the worship of Apollo in that district. To avert the evil influence of *Lips*, the south-east wind, on the vines, two men would cut a cock in halves, and each run with one half in opposite directions round the vineyard, and then bury the bird on the spot where they met. Soon after the appearance of cocks and hens in Greece, whole families of these fowls must have been transported to Sicily and South Italy, and there, as in Greece, spread from house to house. That the Sybarites would suffer no cocks near them for fear of being disturbed in their sleep is one of those late-invented anecdotes by which people proved their wit. Sybaris was destroyed in 510 B.C., when the cock was unknown in Italy, or only just introduced. The figure of a cock may be seen on coins of Himera

in Sicily, and sometimes the figure of a hen on the reverse side, perhaps as an attribute of Asklepios, the genius of the healing springs of the place. The oldest representations of the cock on coins and vases in Greece, Sicily, and Italy, never go beyond the date we have given, namely, the second half of the sixth century B.C.

The Romans, to whom the bird was brought either directly or indirectly from one of these Greek towns, made use of it with truly Roman religious craft as a means of prophecy in war; as no augur accompanied the march of the army, and *auspicia ex avibus* were therefore impossible, the expedient was resorted to of taking tame fowls in a cage so as to obtain *auspicia ex tripudiis*. If the fowls ate greedily of the food thrown to them, so that pieces of it fell from their beaks, it was a *tripudium solistimum*, a sign favourable to the proposed undertaking; if the contrary happened, it was understood as a warning against it. Of course the *pullarius* or fowl-keeper had the issue of the experiment in his own power, according as he fed or starved the fowls beforehand. That this custom was of late origin is proved by the rather sceptical reception it met with at a period when religion was no longer so ardent. Cicero relates that a general in the first Punic war, P. Claudius Pulcher, ordered the sacred fowls to be thrown into the water because they would not touch the food given them. "If they will not eat," he cried, "let them drink;" but he paid for this blasphemy with the loss of his fleet. Cicero himself does not speak very respectfully of divination by fowls, and Pliny is ironically astonished that the most important affairs of state, decisive battles and victories, should be determined by fowls, and the ruler of the world be ruled by them in turn. Fowls play no great part in Cato's "Rural Economy"—he only describes in one passage how fowls and geese should be stuffed; but the ample directions as to the treatment of these domestic birds given by Varro and Columella show how greatly developed and extended was the breeding and care of fowls in their time.

Large and improved varieties of the Asiatic fowl, especially of fighting cocks, were procured from various places in Greece, famous for particular breeds and races. In earlier times the Isle

of Delos had been thus celebrated, and Cicero relates that the Delians could tell by looking at an egg which hen had laid it (not such a very difficult thing either, for to say "as like as two eggs" is not saying much); but now the fowls of Tanagra, Rhodes, and Chalcis stood in the highest repute for strength and beauty. Varro, Columella, and Pliny also mention the large so-called Melic fowls (*gallinæ melicæ*), which Varro (who was also a philologist) says ought really to be called *Medicæ*, Median fowls. From this we gather that Media, whence fowls were first brought into Europe, still kept supplying fresh blood even in the Roman times; but, for that very reason, the form *melicæ* may be the more correct one, representing the Old Bactrian *meregha*, bird, Persic *murgh*, Kurdic *mrishk*, and Ossetic *margh*, hen, which would also in that case be the original (distorted by popular etymology) of the Greek *meleagris*.

There is no direct historical testimony as to the manner in which domestic fowls were introduced into Central and Southern Europe. They may have come straight from Asia to the kindred nations of the South Russian steppes and the eastern slopes of the Carpathian mountains, whose religion agreed with that of the other Iranian races, and some of whom already practised agriculture in the time of Herodotus; or by way of the Greek colonies on the Black Sea, the influence of which, as is well-known, spread far and wide; or from Thrace to the tribes on the Danube; or from Italy by way of the ancient commercial roads across the Alps; or through Massilia to the regions of the Rhone and Rhine; or, finally, by several of these ways at once. The more a people of nomadic habits accustomed themselves to a settled mode of life, the more easily would the domestic fowl find shelter and acceptance among them. In the middle of the first century B.C. Cæsar found fowls among the Britons, though perhaps only among those who tilled the ground near the south coast and had adopted the culture of the Gauls. When we examine the different languages, we are furnished with interesting results. We see several sets of names running from nation to nation, sometimes crossing each other, and throwing a faint light on the residences and intercourse of those nations. As the domestic fowl was unknown in Greece

before the latter half of the sixth century B.C., we dare not fix the date of its arrival in Central Europe before the fifth century; and that which was quickly accomplished in civilized Greece could only gradually and slowly come to pass in the barbaric North. At about that period—

(1) The Germans must already have formed a separate whole, for they distinguished the bird by a name proper to them alone, *hana*.

(2) They must have been living together in a circumscribed space, for *all* the Germanic races alike have the name; consequently they were not yet divided into a Scandinavian and a Continental branch.

(3) The Germans must have been immediate neighbours to the Finns, for the Gothic word is found again in Finnic (not in Lettic, Lithuanian, etc.).

(4) The German consonant-change cannot yet have commenced, for the German *hana* sounds in the Finnic *Kana*.

(5) The creative impulse in the language of the Germans of that period was still so naturalistically fine and active that, with the smallest possible vocal means, it formed separate names for the male, female, and young of the animal, as it had done already in "bull, cow, and calf," etc. From the Gothic *hana*—which itself has a very archaic shape, being formed with no other assistance than the *n* so frequent in noun-stems—there were derived, first, a neuter noun (Old High Germ. *huon*, therefore Gothic *hôn*) meaning a chicken of either sex, and latterly a fowl in general, like our Germ. *huhn*; secondly, by means of a *j*=*y*, a feminine noun to signify the female sex (Old High Germ. *hennâ*, therefore Gothic *hanjô*)—both uncommonly primitive formations.

(6) Slavs and Lithuanians must have been already separated, for they have different names for the cock.

(7) The Slav nation must even in their original home have formed two groups, what is now the western, and what is now the north-eastern and southern; for the name *pietlŭ* for a cock is found only among the latter, and *kogut*, *kohut*, principally among the former; at the same time the first word, in its meaning of "the singer," though not in its etymology, agrees with the Lithuanian and perhaps the German word.

(8) The Slavs, after their separation from the Lithuanians, must have had a connexion (of which there are other indications) with the Medo-Persian races (Scythians, Sauromatians, Budini, Alani), because the words *kurŭ* and *kura* (cock and hen), common to all Slavs, are also Persic: *churu*, *churûh*, *churûs*.

(9) The *tik*, *tyuk* (hen) of the Magyars agrees exactly with the Kurdic *dik* (cock), which again is Arabic. Did they borrow it—like their word for *thousand*—direct from an Iranian nation, while they still dwelt beyond the Volga in the land of the present Bashkirs?

(10) A singular chain of names runs from the Channel to the farthest corner of the Baltic, *i.e.*, from the French (not Provençal) and Armoric *coq* to the Finnic *kukko*, and extends to other Finnish races; while as a diminutive word *küch-lein*, *chick-en*, etc., the same word prevails among the Low Germans, Anglo-Saxons, and Scandinavians (not among the High Germans); in other words, has stuck to the soil along the line we have mentioned.

(11) No trace points directly to Italy, but all more or less lead to the south-east of the continent, which is only the case with Iranian, not Semitic, acquisitions of culture. If the Old Thracian and Old Illyrian or Pannonian languages had been preserved, perhaps the similarity of sounds afforded by the Greek would grow into full identity.

(12) The Old Bactrian *kahrka*, fowl (which we infer from *kahrkâça*, fowl-eater, *i.e.*, vulture), entirely agrees with the Old Irish *cerc*, hen, *cerc-dae*, gallinaceus. Between these comes the Ossetic *kyark*, hen, and the gloss in Hesychius, "*kerkos*, cock," a name used somewhere in the Balkan peninsula; perhaps also the Gothic *hruk*, cock-crow, and the corresponding verb *hrukjan*. The word therefore goes straight across the European continent from the Pontus to the Channel and beyond; and it dates from the time when Celtic races were partly roving, and had partly settled down, from Gaul to the Black Sea.

(13) It was natural that the religious ideas connected with the bird and its name should accompany them in their migrations from land to land. The phrase, "To set the red cock on his roof" (= set his house on fire) names—instead of the element itself—the

bird sacred to it and related to it in idea. A passage in the "Volumen decretorum" of Bishop Burchard of Worms, which says it is dangerous to leave the house at night before cock-crowing, "for then foul spirits have more power to harm, and the cock by his song can do more to scare and quiet them than the god-like spirit in man by faith and the signing of the cross," sounds like a faithful report of the old Persians' belief in the foul spirits they called *daêvas*, and in the power of the cock's voice to drive them away. In Hamlet, Horatio says, in quite the same sense—

> "I have heard
> The cock, that is the trumpet to the morn,
> Doth with his lofty and shrill-sounding throat
> Awake the god of day; and, at his warning,
> Whether in sea or fire, in earth or air,
> The extravagant and erring spirit hies
> To his confine."

The sacrificing of the bird of day at night-time to the Goddess of Night in Ovid belongs to the same circle of ideas. The Slavonian Pomeranians also reverenced the cock, and worshipped it on their knees; among the Lithuanians, the cock and hen were sacrificed to the Goddess Earth, and when a new house was blessed those birds were let in first. The old Indian law-book forbade the eating of the flesh of fowls; and the priests of Eleusis also denied themselves this food, for the birds were sacred to the Chthonian goddess Persephone and to Demeter. Cæsar surprises us by saying of the Britons, "They think it unlawful to eat hares, fowls, or geese;" so that with the bird and its name they had also taken over the dread of its divinity. As the Romans had recourse to tame fowls for prophecy when wild birds and bird-gazers were not to be had, so the heathen Danes in Zealand every ninth year sacrificed cocks—together with men, horses, and dogs—because they could find no birds of prey: "cocks instead of hawks," says the chronicler Thietmar. As Plutarch informs us that a white cock was sacrificed to Anubis, as the ruler of the upper world, and a saffron or brimstone-coloured cock to the same god, under the name of Hermanubis, as ruler of the under-world; so in the Völuspâ, the oldest part of the Edda, the golden-combed cock,

the symbol of light, chants in Valhalla, and the demonic black cock in the halls of Hel; and popular legends make a similar distinction between the white, red, and black cock.

The Russians under Sviatoslav sacrificed to the dead at night near Dorostolum on the Ister, by strangling sucklings and cocks and throwing them into the river; and at the funeral of a Russian chief, described by Ibn-Foszlan, cocks and hens are slaughtered and thrown to the dead man in the boat. If it be true that the cock was peculiarly sacred to the god Donar, Thunar, or Thor—this German god must have been substituted for Craosha, or a corresponding god of the intermediary nations. Now, as the northern races, when this novel and strange animal first appeared among them, were still in a quite elementary state of consciousness, and could only utter the impressions they received in fumbling figurative language, there is no doubt that many new superstitions about the cock would spontaneously take root and spread amongst them. And our comparative mythologists, who avail themselves of the real or supposed agreement of mythic notions, names, sayings, fairy tales, incantations, and customs among the ancient and modern nations of Europe and Asia, to construct a copious and highly imaginative "primitive mythology of the Indo-European race," should remember three things at every step they take: first, that, so far as our vision extends, there has also been an immense deal of borrowing both in culture and religion; secondly, that the same circumstances and stages of life have called forth similar movements at widely different points and at very different times; and thirdly, that, within certain limits, mere chance must be allowed its due.

Instead of following the history of the cock through the Middle Ages and all the five continents, for this useful fowl has penetrated even to the negroes in the heart of Africa, we prefer to conclude with the words of worthy old Thomas Hyde (*Veterum Persarum et Parthorum et Medorum religionis historia*, ed. 2, Oxonii, 1760, 4to, p. 22): "To this day Media is so rich in fowls that travellers in that country live almost entirely on fowls and their eggs, with the addition of mutton. From this region came that most useful bird, and is spreading all over the world. It is good to know

this, because in the course of *time* foreign things have become, as it were, indigenous amongst us, and we forget whence they first came. And this is true of many plants and trees and not a few animals"—words that we might have prefixed as a motto to the whole of this book (note 68).

THE PIGEON.

HOMER frequently mentions doves under the names of *peleiai*, *peleiades*, but nothing leads us to suppose that he meant the domestic pigeon. Pigeons are to Homer the symbol of flight and timidity; thus Artemis, deprived of her bow and arrows by Hera, flies the field—

> "So when the falcon wings his way above,
> To the cleft cavern speeds the gentle dove."

Hector flies before Achilles like a timid dove from the falcon—

> "Thus at the panting dove a falcon flies
> (The swiftest racer of the liquid skies):
> Just when he holds or thinks he holds his prey,
> Obliquely wheeling through the aerial way," etc.

Therefore Homer's favourite adjective for the dove is *trērōn* (shy, fleeting); and Æschylus calls it the "trembling dove." In the legend of the Argonauts the dove is the *swiftest* of birds. The ship *Argo*, as the name indicates, was wonderfully swift, and if a dove had time to fly through between the clashing rocks, the heroes' ship could hope to sail past unhurt. Circe's warning as to the Symplegades in the Odyssey owes its origin to this legend of the Argonauts—

> "High o'er the main two rocks exalt their brow,
> The boiling billows thundering roll below;
> Through the vast waves the dreadful wonders move,
> Hence named Erratic by the gods above.
> No bird of air, no dove of swiftest wing,
> That bears ambrosia to the Ethereal King,
> Shuns the dire rocks; in vain she cuts the skies;
> The dire rocks meet, and crush her as she flies."

The tragic poets speak of the dove as being swift as the storm wind, swift as rage or revenge. It is true that the falcon is still swifter, being the very swiftest of all birds, for it hunts the dove, and is only excelled by the Phæacian ship that carried the sleeping Ulysses to Ithaca: "So fast she flew, that wheeling hawk, fleetest of fowl, could not keep pace."

The rocks and woods of Greece were so peopled with doves, ring-doves, rock-doves, turtle-doves, that the part these birds play in poetry and legend cannot surprise us. The Catalogue of Ships in the Iliad speaks of Bœotian Thisbe and Lacedæmonian Messe as *poly-trērōn*, many-doved; and Æschylus calls the Isle of Salamis "dove-nourishing." Doves and thrushes were caught in nets or snares fixed in the bushes, as is proved by a simile in the Odyssey—

> "Thus on some tree hung struggling in the snare,
> The doves or thrushes flap their wings in air;"

it is therefore not surprising that in the 23rd book of the Iliad Achilles ties a living dove to the mast of a ship as a target in the games held at the burial of Patroclus. The skilful Teucer shoots first, but having neglected to make his vows to Apollo, he only cuts the string, and the liberated dove wends her flight to heaven; then Meriones deftly grasps his bow, prays, and brings down the circling dove. Hence the dove became the mythic symbol of an escaped prisoner. The three daughters of Anius at Delos—Oino, Spermo, and Elaïs—who changed everything they touched into wine, corn, and oil, and were therefore called Oinotropoi, changed themselves into doves and flew away, when Agamemnon was about to chain them and take them by force to Troy (Ovid's "Metamorphoses"). The oracle of Dodona in Epirus proves that the dove was considered a dæmonic prophetic bird; at that shrine the ring-doves in the sacred oak announced the will of Zeus by their flight and cooings, the noise of their wings, their coming or going, rising or sinking; while bird-oracles were also a very ancient custom over Italy, a country that in many respects resembled the Epirote lands of Greece. The ancient Veneti used to scatter cakes in the fields for the crows, so that they might spare the seed.

In all the passages we have quoted from the epics the dove or pigeon is called *peleia;* only once in Homer does the later word *phassa* occur as part of the adjective *phasso-phonos*, dove-killing, an epithet of the hawk. A third name, *phaps*, Gen. *phabos*, is first found in Æschylus, who describes a poor unhappy dove pecking at the corn, and getting its bones crushed by the winnowing-spade. Later and more scientific zoology (Aristotle) uses these names to distinguish different kinds of doves, and adds *oinas*, literally wine-dove, and *trygōn*, the turtle-dove, named from its cooing (*tryzo*), and first used by Aristophanes in "The Birds." In the primitive time these names were probably given without distinction, according to the speaker's locality, or some quality of the bird that he happened to be thinking of, to wild doves in general; for the Dodonian "peleia," which lived in trees, *columba palumbus*, cannot possibly have been the same as the "peleia" in Homer, which hides in the cleft of a rock, the *columba livia*, or rock pigeon. The true name of the pigeon, and with it the pigeon itself, appears only in the later Attic dialect; first in Sophocles, with the unmistakable epithets, *oiketis* (house-dove) and *ephestios* (hearth-dove), then in the Comic poets and Plato; namely, *peristeros*, *peristera*, the cock and hen, *peristerideus*, etc., the young, *peristereōn*, the dove-cot—a new set of words never accepted by the Doric dialect, which continued to say *peleias.* From what region did this friendly domestic bird, which was quite common in Athens towards the end of the fifth century B.C., come to the Greeks? And was the tame pigeon possibly identical with one of the wild species living in Greece? To answer this question, we must first, as usual, turn to the Semitic world.

That the dove was sacred to the goddess of nature, who was worshipped under various names in the cities of Syria, and whom the Greeks called Aphrodite, and that large flocks of pigeons were kept at her temples, are facts attested by several independent authorities. When Xenophon accompanied the army of the younger Cyrus, and passed through Syria, he found the inhabitants worshipping fishes and pigeons. Pigeons, says the pseudo-Lucian (De Syria Dea), were held so sacred at Hierapolis or Bambyce,

that none dared even to touch one, and if any one did so accidentally, he was under a curse for the rest of the day; so that pigeons, says our informant, were quite men's companions, entering the houses, and taking possession of the land. The same thing is said by Philo the Jew about Ascalon, the original seat of Aphroditē Ourania, *i.e.*, Astaroth: "There I found an innumerable quantity of pigeons in the streets and in every house, and when I inquired the reason, I was told that an ancient religious commandment forbade men to catch pigeons or use them for any profane purpose. Hence the bird has become so tame that it not only lives under the roof, but is the table-companion of man, and is very bold and impudent." The pigeons that flew in and out of the temple of the Paphian goddess in Cyprus, and even perched on her sacred image, are so well known that no special proof need be given.

Now as the Astarte of Ascalon was very early transplanted to Cythera and Lacedæmon, and the Semitic Aphrodite in general to Corinth and many other places on the coast of Greece, while Cyprus early became the goal of Greek voyagers and colonists; one would think that the favourite bird and symbol of that goddess would have accompanied her to Greece, and become an object of domestication in her temples at an equally early period. But not one tradition points to such a thing. In Homer's Hymn to Aphrodite her doves are never mentioned, though he describes the goddess entering her perfumed temple, being anointed with divine oil by the Graces, adorned with golden ornaments and clothed in splendid garments; and even when she leaves the temple she merely "soars up to windy heaven." In the shorter hymns, not one of the many epithets given to the goddess alludes to her doves. In an ode by Sappho, her chariot is drawn by swift sparrows, not by doves or swans. A couplet quoted from the same poetess speaks of doves letting their wings droop, but without allusion to any goddess. In all the rest of lyric poetry, down to Pindar, as far as it exists, the dove is never mentioned.

This late appearance of a bird that afterwards played so prominent a part in art, religion, and human life, is evidently the result of a similar course of events in Syria, Palestine, and Cyprus.

There too the tame pigeon is not very ancient, and only became the symbol of Astarte and Ashera when invasions and commerce had caused the worship of these goddesses to be incorporated with that of the intrinsically similar Semiramis of Central Asia. Semiramis was imagined as a dove, and the name signified a dove. "In the Syrian language Semiramis is named after the dove, which *since that time* has been worshipped as a goddess by all the inhabitants of Syria," says Diodorus. Semiramis, immediately after her birth at Ascalon, was exposed by her mother, the fish-goddess Derketo; she was fed by doves, and brought up by the shepherd Simmas, who named her after himself. She then appeared at Nineveh as a glorious female warrior, and finally transformed herself into a dove and flew away with others of her kind. Another legend says that an immense egg fell from heaven into the Euphrates, that fish rolled it on shore, doves hatched it, and out of it came forth Venus, who was afterwards called the *dea Syria;* and that hence the Syrians held fish and doves sacred, and would not eat them. We see, then, that the worship of doves came from the Euphrates to Western Asia, and with it the conception of the Goddess of Nature as a dove.

In the Old Testament the first tolerably reliable mention of the tame pigeon is found in the pseudo-Isaiah lx. 8; "Who are these that fly as a cloud, and as the doves to their windows?" This part of Isaiah was written during the Captivity; and it is at this time, after the Babylonian conquest, that the adoption of pigeon-breeding in Western Asia, and of that gentle bird into the Syro-Phœnician cult may have gradually taken place. If the allusions to the dove in Solomon's Song can only refer to the tame pigeon, which we leave undetermined, then that poem also, whose age is quite uncertain, cannot have a higher date assigned to it. According to Josephus (Wars, v. 4, 4) there were "many towers of tame pigeons" in the later royal palace at Jerusalem, which was destroyed in the general conflagration.

From the Syrian courts, in a roundabout way, the domestic pigeon reached the Greeks about the beginning of the fifth century B.C. This is proved by a remarkable statement, which, however, must be rightly understood. Charon of Lampsacus, the precursor

of Herodotus, says, that at the time when the Persian fleet under Mardonius was wrecked while rounding the promontory of Athos, two years before the battle of Marathon, white doves appeared in Greece, where until then they had been unknown. What is meant by these "white doves"?—nothing but domestic and temple pigeons of superior race, for wild pigeons were distinguished by being black, dun, grey, or ash-coloured, and named accordingly, not only by the Greeks, but in the languages of the other Aryan nations of Europe. Herodotus expressly calls the doves of Dodona *black;* although he explains both the black feathers and the whole mystery of the pigeon-oracle in the rationalistic manner of the more modern time. The Greek name *peleia* is derived from the adjective *pelos*, grey, as the ancients themselves say; it is the same word as the Latin *palumbus*, *palumba*. The Czech, Polish, and Russian names for the wild dove, *siwák*, *siziák*, are derived in the same way from *siwy*, *sizyi*, grey, raven-grey; the French *biset*, stock-dove, from *bis*, blackish. In like manner the word *dove* (Germ. *Taube*, Goth. *dubo*, A.-Saxon *deáf*, Old Norse *daufr*) is connected with the adjective *daubs*, deaf, dumb, blind, dusky, *dark-coloured;* for which last meaning the Celtic language affords a welcome confirmation in the Old Irish *dubh*, black, *dub*, ink, *Dubis*, *Doubs*, the black river. On the other hand, the Asiatic dove sacred to Aphrodite is always styled the white, *leukē*, *alba*, *candida*, because of its delicate white feathers. Martial, in an epigram written on a toga which he had received as a present, praises its whiteness and compares it to the lily, the privet-blossom, ivory, the swan, the Paphian dove, and the pearl. Silius Italicus, partly differing from Herodotus, and probably following Pindar, relates that two doves sprang from the lap of Thebe, one of which flew to Chaonia and prophesied from the top of the oak at Dodona, while the other, *white* with white wings (so the first must have been black or grey), crossed the sea to Africa and there, as Cytherea's bird, founded the Ammonian oracle. So the "white doves" mentioned by Charon must have been tame pigeons that escaped from the wrecked ships of the Persian fleet to the land at Athos, and fell into the hands of the inhabitants. But as Herodotus tells us that the Persians abominated the Assyrio-Babylonian

white doves as inimical to the sun, and would not suffer them in their country, it must have been Phœnician, Cyprian, and Cilician sailors that carried with them images of their goddess, and also her sacred doves. Half a century later we find the pigeon under the name of *peristera* (which perhaps originated in that northern region), completely domesticated among the Athenians, who had active commercial and political relations with Thrace; and, as in the East, it is used as a swift messenger. The Æginete Tauro-sthenes, who lived at that time, sent the news of his victory at Olympia to his father by means of a pigeon, which reached Ægina the same day. From many passages in the works of the poets, and from plastic representations, we know that from the above period doves were inseparably connected with Aphrodite, being kept in her temples, and offered, either alive or in marble, at her shrine. There was also much significance in gifts of pigeons on the part of lovers.

It is probable that Italy first became acquainted with the domestic pigeon by means of the temple at Eryx in Sicily. On that mountain, an ancient seat of Phœnician and Carthaginian culture, there lived flocks of white and coloured pigeons, sacred to the great goddess there worshipped, and participating in the festivals celebrated in her honour. When the goddess departed for Africa on the day of the Anagogia, her doves vanished also; and when, after nine days, the first dove re-appeared, the goddess was also near, and the noisy joy-feast of the Katagogia commenced. During the gloomy interval the pigeons were probably kept shut up. The Sicilian Greeks, as we infer from the Latin name *columba*, *columbus*, called the bird, when they first saw it, *kolymbos*, *kolymba*, diver, waterfowl; for the wild doves that inhabited the cliffs, the rocks, and the summits of high trees were dark in comparison with the waterfowls, which were distinguished by the adjective white; for example, the swan—Old High Germ. *alpiz*, A.-Sax. *älfet*, Old Norse *âlpt*, Slav. *lebedĭ*, all identical with the Latin *albus*, Greek *alphos*. The Greek *Kolymbos* has an analogon in the Lithu. *gulbe*, and Old Irish *gall*, swan; and as it meant the white waterfowl, it was natural to call by it the white bird of Aphrodite, who herself was a pelagian goddess and therefore

loved the swan also. In Italy the beautiful bird gradually became familiar, and its propagation a common custom. "At first," says Varro, "we used the name *columbæ* without distinction for male and female, and only later, when the bird had become common in our houses, did we learn to distinguish the *columbus* from the *columba*." He tells us that one species of native dove, the *genus saxatile*, rock-dove (Italian *sassajuolo*), was kept half-tamed in the villas; these birds inhabited the highest towers and pinnacles of the country-house, coming and going, and seeking their food in the open country. "The other kind," adds Varro, "is tamer, and lives only on the food given to it; it is generally white, while the wild pigeons are of mixed colour without any white." This completely domesticated white pigeon—evidently the Cyprio-Syrian bird which came originally from Babylon—was often put together with the native grey pigeons, and thus a cross-breed was formed, *miscellum tertium genus*, of which frequently as many as 5,000 birds were kept in a large pigeon-house, called *peristereon*, or *peristero-tropheion*. Galen was acquainted with the two kinds, the house-pigeon and the field-pigeon, and adds that in his native place, in the neighbourhood of Pergamus in Asia Minor, towers were built in the country, into which the latter species were enticed, and there maintained. This half domestication of the wild pigeon probably existed in very early times, not only in Asia Minor, but in the East in general. The Mosaic law relating to the sacrifice of pigeons proves that in Canaan, where doves are so common, places for keeping the *columba livia*, and also the turtle-dove, must have existed very early, for the Hebrews never sacrificed *wild* animals. In the legend of Noah's ark, the dove which returned and the raven which stayed away seem meant not only to express the difference in colour, but the contrast between wild and tame. So in Egypt. It is true that in the coronation-scene (Wilkinson, second series, pl. 76) the four pigeons that fly to the four quarters of the globe as a symbol of universal dominion can only be meant for wild birds; but the domestic scene described by Brugsch represents pigeons being actually fed. It must not be forgotten that the accompanying inscriptions are said to mean "the goose is fed;" "the duck receives food;" "the pigeon

fetches its food;" the last expression being exactly suited to the shy yet greedy field-pigeon. But the pigeon of Semiramis, that of Ascalon, the coloured bird which is the parent of our common species, cannot have existed in Egypt at such an early period, else it would have appeared earlier than it did in the civilized countries of Asia and Europe.

From Italy the domestic pigeon overspread Europe. The Celtic names (Old Irish *colum*, Welsh and Old Cornish *colom*, Breton *koulm*, *klom*), as well as the Slavic names (*golạbĭ*, etc.), were all borrowed from the Latin. The image of the dove was very early adopted by Christianity as a symbol; it was a pure gentle bird, innocent and without guile; the Holy Ghost descended in the shape of a dove; and in that shape, when a true believer died, his soul ascended to heaven. Figures of doves are frequently seen in the most ancient Christian catacombs; and in the mediæval legends of the saints the dove is the outward sign of the influence of the Heavenly Spirit. When Chlodwig, King of the Franks, was baptized at Rheims, the oil for anointing him was brought to St. Remigius by a dove from heaven. From the time of the Fathers it was a common belief that pigeons had no gall. The Pope gave away images of the Dove as he did the Golden Rose. In the eyes of the primitive European nations the grey pigeon, which lived in wild solitudes, was a gloomy prophetic bird, and perhaps a bird of death; afterwards, a symbol of the contrast between heathenism and Christianity, appeared the graceful, gentle, white pigeon from abroad, living with men, and so tame that it would eat from the hand. In the West, however, it was always a domestic creature, whose droppings and feathers were made use of, and whose flesh was eaten like that of geese, ducks, and fowls; but in the congregations of the Anatolian Church, in accordance with old Eastern ideas, it was the object of religious reverence and superstition. In Moscow and other Russian towns flocks of tame pigeons are kept and fed by merchants and others; and to kill, pluck, and eat one of these sacred birds would be considered a kind of sacrilege, just as it was at Hierapolis and Ascalon in the time of Xenophon and Philo. At Venice, a half-Greek city, swarms of pigeons still inhabit the cupolas of St. Mark's, and the

roof of the Doge's Palace. They fly down and strut about the Piazza undisturbed, and at stated hours are fed at the public cost. Our present European breed of pigeons is, indeed, still divided into the two branches described by Varro; but in consequence of cross-breeding the kinds and varieties of the true domestic pigeon have multiplied immeasurably, as every pigeon-show and zoological garden can prove. Travellers report that in the East, even now, there are immense pigeon houses, the principal object of which is the production of the pigeon dung so invaluable for manure; it is possible that these pigeons are the same *columba livia*, with the same form and size as those mentioned by Galen, and which were supposed to have existed in Egypt and Palestine. The Mohammedans are also fond of keeping pigeons in mosques and sanctuaries at Mecca and elsewhere, for they, like the Oriental Christians, look upon the dove as a sacred bird; it was a dove that whispered all that it had seen and heard into the ear of the Prophet. But at no time, either in the East or in the West, has the pigeon ever attained such importance in life as the domestic fowl (note 69).

There are three other domestic birds which came from Asia to Greece in historic times; quite as novel to Europe as the two already mentioned, and, like them, brought to the West in the Greek age to satisfy the desire for wider and richer experience excited by higher stages of civilization. They are the *Peacock*, the *Guinea-fowl*, and the *Pheasant*.

THE PEACOCK.

THE peacock was less immediately useful than the pigeon, but it was more calculated by the proud display of its magnificent plumage to delight the multitude and increase the splendour of rich houses and royal courts. Varro says it was considered the most beautiful of all birds. The road along which it came to the ancient civilized nations can still be recognised, at least in the principal points. The peacock was a native of India, and—like shining gold, glittering jewels, white ivory, and black ebony—was one of the most admired and envied productions of that distant land of wonders. There Alexander the Great found the peacock in a wild state in a wood full of unknown trees, and, struck by the beauty of the bird, threatened anybody who should kill one for sacrifice with the heaviest punishment. In India, then, the peacock lived wild in the woods, and thence by means of Phœnician marine traffic it was brought to the Mediterranean, as is proved not only by a particular passage pointing to the commencement of the tenth century B.C., but also by a comparison of names. The ships of King Solomon, equipped in the harbours of Edom, brought peacocks on their voyage home from Ophir, together with other valuables; in the Hebrew text the birds are called *tukkiyîm*. This word is no other than the Sanskrit *çikkî*, called in Old Tamulic *togei*. So Ophir was situated on the coast of Malabar, or if it was only an intermediate emporium, the costly wares mentioned came from Malabar to Ophir; and the extraordinary peafowl, together with the gay-coloured parrots and amusing apes, were thought not unworthy to adorn the court of the wisest of kings. But the bird must have long remained a rarity; it was costly to obtain, and probably was not entirely

tamed nor easy to keep and propagate in a new climate; as we conclude from the slowness of its extension towards the West, and the difficulty with which it was kept and bred at Athens, even at the close of the fifth century. The Greek name *taōs* (which in Attica was quite exceptionally pronounced *tahōs*) proves it to have been introduced to the Greeks from Semitic Asia. Probably the first place at which peafowls were kept on Greek soil was the Heræum of Samos, for the legend of that temple makes it the spot where peacocks first originated, and whence they were introduced into other countries. What caused the bird to be considered the favourite of Hera was the brilliant "eyes" on its tail feathers: those eyes were stars, and Hera was the Goddess of Heaven, not only in the borrowed Samian, but in the original Argive cult. Beside her temple flowed the brook Asterion, the star-brook, whose three daughters had been Hera's nurses; on its banks grew the herb Asterion, the star-wort, which was offered up to the goddess; and the peacock, the star-bird, when once it became known, was very naturally adopted into the worship of Hera. Quite as naturally arose the various forms of the myth: how the all-seeing Argus, the spy upon the Moon-goddess Io, was changed into a peacock after being killed by Argeiphontes; or else, how the peacock with its flowery plumage sprang out of the crimson blood of the dead Argus, spreading its wings like the oars of a ship; or again, how Juno set the hundred eyes of Argus on the feathers of the bird. Though legend thus derives the bird from Samos and not from India, we cannot suppose that its adoption into the worship of Hera took place in "immemorial times" as Movers will have it; we know that it is in the nature of religious institutions and the legends attached to them, to ascribe to themselves a life without a beginning. When the later temple in Samos—which Herodotus declared to be the largest Greek temple of his time—was completed, a gift of the first pair of peafowls was perhaps made to the temple by some rich merchant who traded with Syria and the Red Sea, or by some pious Samian who had emigrated to a Syrian or Egyptian seaport. And if that pair died, the priests would procure another, which would live and multiply, attracting pilgrims by their novelty and swelling the

revenues and reputation of the temple; the island was so proud of possessing the rare and beautiful birds, that the image of a peacock was stamped on its coins. Yet the bird can scarcely have reached Samos by the time of Polycrates (540 B.C.), for if the poets Ibycus and Anacreon, who lived at the court of that tyrant, had ever set eyes on a peacock, they would surely have mentioned it in their poems; and later authors, like Athenæus, would not have neglected to cite them and preserve them for posterity (note 70); and reports about the bird, and even the bird itself, would certainly have reached Athens. But the fact is, that the peacock is not found at Athens before the middle of the fifth century, and even then it is a great curiosity and the object of extreme admiration. Perhaps the revolt of Samos from the Athenian hegemony, 440 B.C., and the invasion and subjugation of the island by Pericles, afforded the victors an opportunity of carrying peacocks from the Temple of Hera to Athens; though Thucydides only mentions the surrender of the ships and payment of the war expenses. Many passages from the Comic poets, and two epitomes of a *logos* by the orator Antiphon on peacocks, give a striking picture of the excitement caused by the brilliant bird on its first appearance among the curious, novelty-loving Athenians, and show how the eagerness to see and possess it was only heightened by its great price and the difficulty of breeding it. The above-named oration informs us that there lived at Athens a rich bird-fancier named Demos the son of Pyrilampes: he must have been rich, for he equipped a trireme destined for Cyprus, and the Great King presented him with a golden goblet, possibly because he had presented the monarch with a peacock. This Demos was so overrun with curious visitors coming from distant parts, such as Lacedæmon and Thessaly, to see his peafowl and if possible to obtain some of their eggs, that he appointed one day every month, the day of the new moon, on which every one was admitted, on other days he refused all visitors; "and this," continues Antiphon, "has gone on for more than thirty years" (note 71). In fact, his father Pyrilampes had also kept an *ornitho-trophia*, and was said to have assisted his friend the great Pericles in his love affairs by secretly sending peacocks to the fair ones whom that statesman

was wooing. Antiphon goes on to say, that it was not possible to propagate the birds in the city because they flew away, and to clip their wings would spoil their beauty, which lay not in their form but in their feathers. For this reason they long continued to be so scarce that a pair of them was valued at 10,000 drachmæ. "Is it not madness," says Anaxandrides, one of the Comic poets, "to keep peacocks, and spend on them sums that would suffice to purchase works of art?" And in a comedy by Eupolis we read: "What, all that money? Why, I should not spend that if I had hares' milk and peacocks!" The Comic poets do not fail to attribute the value set on the possession of peacocks to their rarity; for in themselves, says a passage in Strattis, peacocks and tomfooleries are equally worthless. In the course of the fourth century, when Athens retained the hegemony, if not in politics, yet in manners and taste, peacocks must have spread more and more from that city among the other Greeks. "Once," says Antiphanes, "it was something grand to possess even *one* pair of peafowl, now they are commoner than quails!" which no doubt was an exaggeration. After Alexander the Great, with the spread of Greek dominion and colonization, the peacock penetrated to the cities and gardens of inland Asia. Though Babylon was said to be rich in beautifully coloured peafowls, and though in itself it is not improbable that a bird which King Solomon had procured from distant lands should have become frequent in a city so closely connected by war and commerce with the Semitic coast-lands on the Mediterranean; yet the circumstance that the Asiatic names for the peacock are all borrowed from the Greek is in favour of the supposition that the Greek dominion—by Re-migration, a thing that may be observed in other cases—first rendered the bird popular in the wide continent. That Suidas and Clement of Alexandria call it a Median bird is as much to the purpose as our calling two American products *Indian*-corn and *Turkey*-cock in England, and *Turkish*-wheat and *Calcutta*-cock in Germany.

The Greeks had called the peacock *tawôs*, *tawôn*, *tahôs*; the Romans called it *pâvus* or *pavo*, *pavonis*. This substitution of *p* for *t* reminds one of the similar change of *tadmor* into *palma*,

which we explained by a supposed difference in Semitic dialects. Is it possible that the peacock also passed to the Latin-speaking races direct from Phœnician-Carthaginian hands? A remark in Eustathius, that "the peacock was sacred among the inhabitants of Libya, and whoever hurt it was punished," is too isolated, and of no value in so late an author; natural history knows nothing of peafowl in Africa, nor religious history of there being any at the Temple of Ammon, or that of the Carthaginian Juno. The eagle and peacock on the coins of Leptis Magna are nothing but apotheoses of Augustus and Livia (or Julia), who are thus deified into a Jupiter and Juno. However, the possibility that this product of the voyages to Ophir (like *ebur*, *barrus*, *palma*) reached the coast of Italy direct from Carthage, Sicily, and Sardinia, cannot be denied.

Peacocks' feathers, and tufts and fans made of them, or hats bedizened with them, are as welcome to primitive man as glass and amber beads, and for them he will gladly exchange his sheep and skins. When Ennius pretends that Homer appeared to him in a dream and told him that he remembered having been changed into a peacock, this was no doubt a Pythagorean idea adopted by the poet when at Tarentum; as the symbol of the starry firmament and the Goddess of Heaven and Earth, the peacock was the very bird to have housed the soul of Homer, for he too was imagined to be a native of Samos, as Pythagoras was. *Pavus*, *pavo*, like other names of birds, appears as a Roman cognomen in the Republican time, so that the bird itself was then no novelty in Italy. Varro mentions one Fircellius Pavo, in whom we should recognise a Sabine by his name Fircellius (*fircus* = *hircus*), even if he had not also that of Reatinus. A creature that had been an object of luxury in Athens must have prospered among the later Romans in as much greater measure as their luxury and wealth exceeded those of the Attic Greeks. The orator Hortensius, the contemporary of Cicero, who was at the head of Roman extravagance in other respects also, was the first who regaled his guests with roasted peacock, which happened at the magnificent banquet given by him on his nomination as augur. Though the flesh of peafowl, especially

that of an old bird, is not very eatable, his example was soon generally imitated. Cicero writes in a letter, "Now mark the impudence: I actually gave a dinner to Hirtius, and without peacock, too;" and Horace reproaches his contemporaries with preferring peacock to capon, *because* the rare bird costs gold and spreads a gorgeous tail, as if that made its flavour any better; the true motive of this "because" being the Romans' proud consciousness of possessing unlimited means, and their consequent self-indulgence. *Fly-flaps* made of peacocks' tails were as common at rich men's tables as golden dishes and cups set with gems. The peacock being thus generally desired, the breeding of the bird in whole flocks soon became an object of industrial husbandry, which at first was not practised without difficulty. The smaller islands surrounding Italy were arranged as *peacock-islands*, probably imitating a Greek practice; thus, in Varro's time, M. Piso stocked the Isle of Planasia, now Pianosa, with his peacocks. The advantages of such sea-surrounded peacock-farms are explained by Columella: the peacock, not being able to fly either far or high, could not leave the island, yet lived there in perfect freedom, and picked up the greater part of its own food; the hens, being free, brought up their young with natural care; no guard was necessary, no thief or dangerous animal to be feared; and the keeper needed only to collect the flocks around the farm at stated hours by strewing a little food, in order to review and count the birds. There being only a limited number of suitable islands, peacock-farms were also laid out on the mainland at great expense. The ancient authors describe minutely the whole arrangement, the necessary care, and the various operations connected with such breeding-places. Towards the end of the second century A.D., Rome was so full of peafowl that, as Antiphanes had prophetically asserted, they really *were* commoner than quails; at the same time new specimens from India were furnished by way of the Red Sea, and probably also by land across Persia. In Lucian's dialogue "Navigium," one of the speaker's wishes, supposing he suddenly became rich, was to have a peacock from India for his table; proving that the bird was still procured from that country.

In all the European languages the name of the peacock begins with the Latin *p* and not with the Greek *t*, a clear proof that the bird was introduced into barbaric Europe, not from Greece or the East, but from the Apennine peninsula. Christianity adopted the peacock, as it did the dove, into its symbolism; partly as an emblem of resurrection, because, according to the fantastic natural history of the time, the flesh of the peacock was said to be incorruptible, and partly as the image of heavenly glory, on account of the beauty of its exterior. In the latter connexion we need only remind our readers of the peacock-feathers in the wings of the angels in Hans Memling's celebrated picture of the Last Judgment, at Dantzig. On the other hand, that distrust of all sensuous beauty, peculiar to the negative genius of Christianity, sharpened a sense of the gorgeous creature's imperfections:

> "Peacock has thief's artfulness,
> Devil's voice, and angel's dress,"

says Freidank's "Modesty;" and its ugly naked feet were pointed out as a warning to be humble. The name of *Petitpas* given to the peacock in the French "Renart," probably alludes to its stealthy thievish gait. For the rest, peacock-feathers were as exactly suited to barbaric taste as inlaid gems and everything that was glittering and striking.

Peacocks' feathers were worn on the knight's helmet, and in the form of wreaths on the necks of noble maidens; and when the splendid garments of the sick King Amfortas, or the majestic costume of the terrible *Kundrie la Sorcière*, or that of King Gramoflanz, are described in "Parcival," there is never wanting, among other costly garments, the *pfaewîn* or *phawîn huot*, namely, peacock-hat. That these peacock-hats came from England we learn from the above-named and other poems, and there too must have been bred the birds that produced the material. Charlemagne had ordered peacocks and pheasants to be kept on his estates, and the custom seems to have been kept up at the castles of the Norman nobles in England. The ancient custom of serving up a roasted peacock in all the splendour of its plumage had not been lost, and was continued down to the sixteenth century.

Generally the lady of the house herself carried in the bird on a gold or silver dish amid the sound of trumpets, and the host carved it as King Arthur does at the Round Table in the "Lanzelot." The custom described in D'Aussy's "Histoire de la vie privée des Français," of the half-mad vows sworn on the roasted peacock by French knights, the so-called *voeux du pân*, in which each tried to outdo the other, is traced by Grimm (R.A., p. 901) to Scandinavian vows on the boar. This enthusiasm for the peacock began to cool towards the time of the Renaissance, and the bird gradually retired into the modest position which it holds to-day. It disappeared from the table together with many other meaningless shows in which a ruder age delighted; for though the savage covers himself with natural objects, such as feathers and tinsel, a more educated taste despises all adornments that are not transformed by the moderating and adjusting hand of art, and raised above the sphere of the elementary. The peacock may yet strut in parks among other gay birds, although its harsh voice and the damage it causes are disproportionate to the pleasure derived from its contemplation; but peacock feathers have been driven farther and farther to the east, to the Tartars, the Russian coachmen, and the Chinese, who use them as signs of the highest rank; they are only fit for the red-and-blue tattooed chieftain who girds them as a brilliant apron round his loins.

THE GUINEA-FOWL.

THE guinea-fowl, *Numida meleagris*, is, to our knowledge, first mentioned by Sophocles, who said in his tragedy of Meleagros, that on the other side of India electron (amber) flowed out of the tears of the birds that wept at the death of Meleager and were called by his name. The legend that the sisters of Meleager were changed into birds at the death of their mother and brother and the fall of their house may be very old, for Myth loves to express unbearable sorrow by a transformation into birds; but it is remarkable that so early as the time of Sophocles these birds were not spoken of as any native species, but as a distant and fabulous one, and were supposed to weep electron in some fantastic land lying beyond India. If we add that other legend, which says that the Meleagrides lived in the Electrian islands at the mouth of the Eridamus, which Æschylus places among the Iberians in the uttermost West, at the very spot where Phaethon fell, and the precious golden gum distils from the poplars into which his sisters the Heliades were changed; it confirms our conjecture that the common cock received his name of *alektor* from the sun, and from amber the stone of the sun; and the guinea-fowl, the nearest relations of the cock, were equally children of the sun, and were imagined as dwelling in the far East where the sun rises, and in the far West where he sets, or rather at the point where east and west meet on the other side of India. Geographically more exact, though still in a half-mythic manner, Mnaseas reports that there is in Africa a region called Sicyon, where the river Crathis flows out of a lake into the Atlantic Ocean; there live the birds called *meleagrides* and *penelopæ* (a gay-coloured, equally foreign species of duck), and there also is electron

made. The very same country, though under other names and with omission of the fabulous origin of amber, is pointed out in the "Periplus" of Scylax as the only place where guinea-fowls were to be found. "If one sails through the Pillars of Hercules, keeping Africa on his left hand, there opens, as far as the Cape of Hermes, a wide gulf called Kōtēs; in the middle of this gulf lies the town of Pontion and a large reedy lake named Kephesias; there live the birds called *meleagrides*, and nowhere else, except where they have been taken to from that place." And, in fact, North-west Africa, the country about Sierra Leone, Cape Verd, etc., is rich in guinea-fowl, though they are also not wanting in the east of that continent. Strabo and Diodorus report that an island in the Red Sea was inhabited by guinea-fowls; Captain Speke found them the "commonest of all feathered game" on his journey from Zanzibar to the sources of the Nile; and Niebuhr says even of Arabia, "guinea-fowl are wild there, but at Tehânia in the mountainous region so frequent that the boys pelt them with stones and bring them to the town to sell." We have no certain knowledge of the route by which these birds were first brought to Greece, whether from the west or the east of Africa, or why they were named after Meleager. Perhaps the first Greeks who actually saw these beautiful birds, near relations of the cock, and sprinkled all over with pearls or tears, thought of the blooming youth who had incurred his mother's curse as the departing Sun-god slain by Winter, and of his sisters as transformed into birds of the sun. Clytus of Miletus, a disciple of Aristotle, says that at the temple of the Parthenos (that is, Artemis, called by the Lerians Iokallis), on the small island of Leros, colonized by the Milesians, there were kept "ornithes meleagrides," which, from the full description that follows, must have been African guinea-fowls. It is not said how they came there, nor why they were sacred to the virgin goddess. As guinea-fowl are even braver and more quarrelsome than the Indian cock, mythical fancy probably saw in these birds the warlike Amazons, the *hieroduli* of chaste Artemis; they had been the companions of Iokallis. "The Lerians know well," says Ælian, "why those who worship the deity, but especially Artemis, deny themselves the flesh

of this bird." The pious legend of Leros asserted that no bird of prey dared to attack the sacred fowls. Iokallis may probably be identical with the Arcadian nymph Kallisto, the daughter of Artemis Kallistē, who stood together with Io in the Acropolis of Athens; and perhaps this explains the otherwise unheard-of statement of Suidas that guinea-fowls were kept in the Acropolis.—Italy, lying nearer to the West African home of the guinea-fowl, might easily become acquainted with the bird by the marine traffic of the West, without any intervention of the Greeks; perhaps for the first time during the Punic wars. The Latin names seem to point to such a possibility: *Numidicæ*, *Africæ aves*, *gallinæ Africanæ*, *Libycæ*, etc.

In Varro's time guinea-fowls were still rare and consequently dear in Italy; they were used for food because the Roman must put everything into his mouth, and the more a dish cost the greedier he was; there is no trace of religious reverence, or of any peep into the world of fancy. With the fall of the Roman Empire the ornamental bird also disappeared from the sphere of European life—for, as far as we can make out, it was unknown in the Middle Ages—till, after a thousand years, it reappeared among Europeans with the revival of ancient culture and the discoveries of the Portuguese along the coast of Africa. It was taken by the Portuguese and Spaniards, those nearest neighbours of the Numidians, to America, where it found a climate and scenery so suitable to its wants, that it now inhabits the forests of Central America in immense flocks which have altogether run wild.

THE PHEASANT.

JUDGING from the name of the Pheasant—the bird of the river Phasis so famed in legend, and flowing through that magic land of Colchis to which in fabulous times the god-like heroes had sailed in the swift *Argo*—it is not unlikely that the Greeks became acquainted with it in the same century as with the cock and the guinea-fowl. The name was given to the bird by men who still conceived of the world no otherwise than as in mythic transformation, but who already began to sport with the myth. The pheasant's native home was probably the woods of Hyrcania, south of the Caspian Sea, whence it became known to the Greek colonists on the Black Sea, and later to the European Greeks. It is not alluded to in literature before Aristophanes. For the reproof addressed by Solon to Crœsus, when the latter displayed himself in all his royal splendour, namely, that "cocks, *pheasants*, and peacocks were far more beautiful, nature herself having adorned them," cannot be accepted as a historic fact, and therefore we made no use of it in speaking of the domestic fowl or of the pea-fowl. But a verse in Aristophanes—

"Not if you gave me the *phasians* that Leogoras breeds!"

shows that in that poet's lifetime pheasants were a costly luxury at Athens. Aristotle in his Natural History now and then speaks of the pheasant in a manner which shows that the sight of the bird was not unfamiliar either to him or his readers. A passage in the writings of the Egyptian king Ptolemy Euergetes II., preserved in the works of Athenæus, affords further historico-geographical explanation. That king, speaking of the animals kept in the palace at Alexandria, says of the pheasants, "These birds, which are called *tetaroi*, were not only introduced from Media, but have

so multiplied by breeding, that they are used for food, and their flesh is considered delicious" (the text is corrupt, but the sense is not to be mistaken). From this we see that Alexandria also received its pheasants from Media, that is, from the South Caspian countries, and their true name of *tetaroi* was identical with that used in the Medic language, as is proved by the modern Persic *tedyrev*, and the synonymous Old Slavic *tetrevĭ*, *teterevĭ*, *tetria*, or *tetere*, adopted from the Persic. The word runs on through Eastern Europe from nation to nation, but is there applied—there being no pheasants—to one of the large native birds, the bustard, heath-cock, grouse, and latterly the turkey. The Scandinavian name, Swed. *tjäder*, Dan. *tuir*, which is wanting in the other Teutonic tongues, was borrowed from the Finnic *tetri*, and this in turn from the Lithuano-Lettic, *teterva*, *tettera*. That the Lithuanians and the Slavs had borrowed it from their ancient neighbours to the south, the Scythian-Sarmatian Medes, is rendered probable by the reasons and circumstances which cause one language to borrow from another, such as conquest, hunting, commerce, religion, and also the interchange of fables relating to animals, in which the names as well as the story are repeated from nation to nation. The Greek *tetraon*, *tetrax*, etc., can hardly be a native word, but is derived from Asia, in the same way as the Latins derived their *tetrao* from the Greek. It will be easily understood, as the Romans practised the breeding of birds in aviaries and parks to such an enormous extent, that the *phasianus*, also called *tetrao*, played a chief part at Roman banquets; in the edict of Diocletian a fixed market price is set on the *phasianus pastus* (fattened), the *phasianus agrestis* (wild), and the hen-pheasant respectively. Pheasants were also kept in Charlemagne's villas, and in consequence the beautiful, highly-valued bird was preserved, not only in royal pheasantries, but generally all through the Middle Ages, and now lives in many countries in a state of perfect freedom; so that Europe, into which the bird was introduced with some difficulty, has become its second fatherland. The two magnificent varieties of the common Western Asiatic pheasant, the gold and the silver pheasant, now admired in aristocratic parks and zoological gardens, became known to us after the discovery of

the sea-passage to India, and were brought to Europe in single specimens from their native country, China. (*Dureau de la Malle* imagines from Pliny's words: "*Phasianæ in Colchis geminas ex pluma auris submittunt subriguntque*"— that these birds existed in Colchis at a much earlier period.) Cuvier believed that the Egyptian Phœnix, which appeared every 500 years, was the beautiful gold pheasant,—a coarse materializing of a mythic symbol or cosmogonic-periodologic fancy, such as we often meet with in works of rationalists and natural philosophers, when they try to explain miracles, primitive history, and the like.

GOOSE. DUCK.

WHILE the number of mammalia that man has tamed and made companions of has only slightly increased in historical times, the farms and settlements of men have become enriched, at a comparatively late period, with various tame birds, among which the domestic fowl is the most important. Bird and cattle-breeding are to a certain extent opposed to one another. It is not where wide plains fertilized by copious droppings stretch in immeasurable corn-fields and green meadows, and are bordered by thick forests, but in the sunny districts of more restricted horticulture, where farm stands close to farm, and hedge succeeds to hedge—it is here that the winged tribe peck and flutter about the human habitation, forming a not-to-be-undervalued source of sustenance and income in the system of the household. Thus in Europe the Romance nations are, in accordance with their habitat and tradition, the bird-breeding, bird-eating peoples; the Germans, on the contrary, feed principally on the flesh and milk of their cattle. France, at a moderate calculation, possesses above a hundred million fowls, and exports to England yearly above four hundred million eggs. In southern countries the only meat that the traveller tastes, often for months together, and that the native peasant regales himself with on feast-days, is a fowl roasted or boiled with polenta.

The taming of the *Goose* and the *Duck* is far more ancient than that of the birds hitherto mentioned; and, what is more, they were not introduced from Asia, but have been reclaimed from the wild native species. The name of the duck was the same in all the kindred races of Europe: Latin *anas*, *anatis*, Greek *nêssa*, Doric *nâssa* (for natia), A.-Saxon *ened*, Old Norse *önd*, Old Cornish *hoet*, Lith. *antis*, O. Slav. *ạty*, Russ. *ut-ka*, etc. As for "goose, gander,"

it runs through the whole Indo-European group, from the Old Irish *geidh*, *géd* (also *goss*) in the extreme West, to the Sanskrit *hansas*, *hansî* in the extreme East. It would be rash to conclude from this that the goose was a *tame domestic* animal among the primitive Aryan stock before the Great Migration; it was doubtless well-known and much sought after on the lakes and streams, and in the swampy lowlands, as it is now among the nomads and half-nomads of Central Asia. Where it was still abundant and easy to obtain, there was no necessity for breeding it artificially in confinement; and so long as men's manner of life was unsettled, a bird that takes thirty days to hatch, and a proportionate length of time to rear its young, was unsuitable to the economy of a pastoral people. But when comparatively stationary settlements were formed on the shores of lakes, the young birds could easily be fetched down from their nests by boys, have their wings clipt, and be brought up in the household; if they died the attempt was repeated, until it finally succeeded, especially as the wild goose is, comparatively speaking, one of the easiest birds to tame. As it does not breed in the south of Europe, but only migrates into the Mediterranean lands in autumn with its young ready-fledged, the process was more practicable in Central Europe than in the classic lands; and as these have but few large sheets of water, the wild goose is not nearly so frequent or accessible there as in the regions about the mouth of the Rhine, in Mecklenburg, Pomerania, and Scandinavia. By the Greeks the goose was considered a graceful bird, admired for its beauty, and an elegant present for favoured friends. In the Odyssey, Penelope has a little flock of twenty geese, in which she takes much pleasure, as we learn from the beautiful passage in which she relates her dream to her disguised husband. Here the geese appear as domestic animals, kept more for the pleasure the sight of them affords than for any profit they might bring. So, in the Edda, Gudrun keeps geese, which scream when their mistress laments over the corpse of Sigurd. At the same time, the Greeks valued geese as careful guardians of the house; on the grave of a good housewife was placed the figure of a goose as a tender tribute to her quality of —vigilance!

Among the Romans perfectly white geese were carefully selected and used for breeding, so that in course of time a white and tamer species was produced, which differed considerably from the grey wild goose and its direct descendants. In ancient as in modern Italy the goose was not so commonly found on small farms as in the North, partly because the necessary water was scarce, and partly because of the damage she caused to the young vegetation. But numerous flocks of this bird cackled in the huge goose-pens (*chenobosca*) of breeders and proprietors of villas; there the enormous liver that made the mouth of the gourmand water was produced by forced fattening—an artificial disease which was poor thanks for their saving of the Capitol. The use of goose feathers for stuffing beds or cushions was foreign to early antiquity; the later Romans first learned the practice from the Celts and Germans. In Pliny's time whole flocks of geese were driven from Belgium to Italy, particularly from the land of the Morini, who inhabited the Belgian coasts; the delicate white feathers which came from that country were celebrated, and are said to have belonged to a species of goose called *gantæ* (the dental in the word is specifically Celtic, though it is also found in the neighbouring Low German dialects, as *gander*, etc., as well as in the O. H. Germ. *ganzo*). This species was no domestic bird, but a wild kind, and the feathers procured from it fetched so high a price, that in distant military stations whole cohorts of Roman soldiers would disperse over the country in quest of it. Pillows stuffed with goose feathers were an innovation at which true Romans shook their heads: "We have now arrived at such a pitch of effeminacy," adds Pliny, "that even men cannot lie down to rest without such an apparatus." Even to the present day, feather-beds are more characteristic of the North, being unsuitable to the warm South. The ancients were also unacquainted with another use of the goose-feather, that of an instrument for writing. The first quill-pens were used at the commencement of the Middle Ages, in the time of the Ostrogoth Theoderic. It is now supplanted by the steel-pen, so that there are three great periods of such instruments—the earliest lasting from the beginning of the art of writing among the Egyptians to the fall of the

Roman Empire, being that of the *split reed*, used by Thucydides and Tacitus; the second, that of the *quill-pen*, with which Dante and Voltaire, Goethe, Hegel, and Humboldt wrote; and the third, that of the *steel-pen* of the nineteenth century, with which leading articles and *feuilletons* are rapidly thrown off, to be sent to press before the ink is dry, and printed by steam. As will be seen, the periods of the instruments of writing do not coincide with those of the material *upon* which men wrote and do write

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In the domestication of birds, antiquity struck out paths in different directions, which have not been followed up since, and arrived at results which the modern world has allowed to fall into neglect. In Egypt, as the monuments show, a large water-bird, which we indefinitely call a heron, had become the tame companion of man; in Rome the crane, stork, swan, and, of smaller birds, the *turdus*, *perdix*, and *coturnix* (thrush, partridge, quail), etc., had become objects of breeding and taming, and, according to the fashion, were now valued, now despised, as a dish for the table. And in the "Leges Barbarorum" (the Salic, Alamannic, etc.), the birds above named, and others whose names are difficult to explain, are still reckoned as domestic poultry, and penalties imposed on stealing them. But the Church forbade the eating of storks (as well as of beavers, hares, and wild horses; see Pope Zachary's letter to St. Boniface, 751), so that in the latter part of the Middle Ages the domestication of birds was limited to geese, ducks, and hens, and it was left to the hunter, who found a grand field in the immense and thinly peopled forests of Central Europe, to provide the kitchen with game. In the Roman period abundance of game was not to be thought of in Italy; distance and the warm climate forbade the importation of the large game that kept the German forests lively, or of the feathered game that covered the northern moors. So the Romans were driven to the artificial breeding of savoury wild fowl, and this they did often in colossal establishments, which practice led to a more or less complete domestication. These attempts, as we said before, have not been repeated in modern times, and though in Europe the wilder-

ness has receded farther and farther, railways now carry the game there killed with lightning speed from the most distant deserts to the centres of consumption. The Paris market fetches its partridges from Algiers and the north of Russia. On the other hand, varieties of the existing poultry, especially of hens and pigeons, are infinitely multiplied in consequence of the ever-expanding and ever-accelerated communication between countries, and those breeds that are most profitable or most beautiful gradually supersede the races handed down to us from antiquity.

HAWKING.

One class of tamed birds, which early antiquity had only heard of as a distant wonder, was introduced all over Europe with the dominion of the Barbarians, and slowly vanished again after the dawn of modern civilization. We mean the *birds of prey* which were trained to chase other birds: the *Kite*, the *Hawk*, and the *Falcon*, those favourites of the knight, that perched so proudly on their master's wrist, and for which he often entertained a passionate affection. Jacob Grimm has devoted a whole chapter of his "History of the German Language" to hawking, setting forth the ruling passion for this kind of chase in passages from the poets and other authors of the Middle Ages, and placing the origin of the custom in the earliest pre-historic times of the German race. But here, as in some other cases, he has taken what was borrowed late as belonging to the earliest period: hawking is no Teutonic invention, but was learnt by the Germans from the Celts, and at no very distant period either.

Hunting *as an art* is a national feature of the Celts, explained by the existence of a rich and powerful aristocracy in Gaul, which country was already highly civilized in the time of Cæsar, and had cities, roads, bridges, tolls, etc. The Romans learnt from the Celts the practice of coursing in the open, the *chasse au courre*, as distinguished from shooting (with dog, crossbow and bolt, in the woods; the German *birsch*, *birschen*, is from the old French *berser*); from them they derived the *canis Gallicus* (mentioned already by Ovid and Martial, and preserved in the modern Spanish *galgo*), the *canis vertragus* (popularized by German lips into *wind*-hund, greyhound), and the *segusius*, a peculiar sort of hound named after a Gallic tribe on the Loire. The last two ex-

pressions are found in old German codes of laws, and though the falcon is there mentioned as a tame hunting-bird, that does not prove its Old German origin. The name of the true German hunting-bird *habicht* (havoc, hawk), proves on the contrary that it came from Gaul; in Old Irish it is *sebocc*, and must have had that or a similar sound in the oldest Celtic. In one of the two branches of Celtic, namely, the British, the *s* of many words was transformed into *h*; in the Cambro-Cornish dialect *sebocc* became *hebauc*, and the word passed to the Germans in this secondary form, Old High German *hapuh*, Old Norse *haukr*, etc. The Germans of the very earliest times fought the bear and wolf, and hunted the auer-ox and bison, the elk, the schelch, and the wild-boar; but they became acquainted with the art of hawking much later from over the Rhine and the Danube. It cannot be affirmed that this kind of hunting ever became national in Germany: it was practised by noble knights and ladies on horseback, followed by a troop of servitors; the peasant never went hawking; he stared at the outlandish pastime of the gentles, as he marvelled at the knight's weapons and manner of fighting, and gradually learnt to pronounce the Romance names of these things.

It is another question whether the Celtic nations that surrounded the Germanic world to the south and west, invented hawking or only developed the art, and, in the last case, whence they originally derived it. The most ancient mention of hawking or hunting with trained birds is found in Aristotle: "In the district once called Kedreipolis in Thrace, the small birds in the marshes are hunted by men in company with hawks; the men beat the reeds and bushes to drive out the birds, which fly up, but are pursued by the hawks, and fly down again in alarm, whereupon they are beaten with sticks and picked up by the men, who give the hawks a share of the booty." Certain Thracians, therefore, used a tame bird of prey to frighten the game down in marshy districts; these birds of prey did not catch the game themselves, but received their portion of the booty, just as in the later European falconry. Philo the Jew repeats the above account in a dialogue preserved in an Armenian translation, but adds: "The history of the Thracian hawk seemed doubtful to me till I questioned several

natives, honest men, who confirmed the report." Was hawking, then, a Thracian invention? We cannot tell; for though something similar is related of India, and the Egyptians trained a particular bird of prey to obey the human voice, those two countries are separated from Thrace by the whole of Western Asia, and if such a striking mode of hunting had existed in the latter region, we should have heard of it from the Greeks. Ktesias speaks of hawking as a curiosity of *India*, so that it must have been unknown at the Persian Court where he lived. Neither can the practice have existed among the nations of Asia Minor that were nearest the Thracians, for the Greeks never allude to it. There may have been some connexion which we can no longer trace between some race that practised this kind of chase on the borderland of India, and the Thracians; the intermediate links being possibly Khorasmians, Massagetians, Sarmatians, and Scythians. In Layard's "Nineveh" we read that on a bas-relief which he saw at Khorsabad there seemed to be a figure of a falconer with a hawk on his wrist. Unfortunately the word "seemed" renders the matter doubtful; but if the rule of the great Euphrates and Tigris Empire extended at times to the borders of India, might not a mode of hunting that was common in the latter country be pictured for once on a wall of the royal palace in the capital? The Celts, whose war-like marches and migrations often took them to the Balkan peninsula, may have brought thence the not easy art of training birds of prey for the hunt. At a certain stage of civilization there is nothing that nations more willingly adopt from their neighbours than a new and easy method of getting at the game which is the object of their desires. Those Celts, at least, who invaded Italy and burned Rome, cannot yet have been acquainted with hawking, for there is not a trace of such a thing to be found among the old Romans. Hints of it first appear now and then during the Imperial period, but in a very uncertain way, until suddenly, during the final migrations of the nations, we find it mentioned by all authors and assumed to be generally practised. One of Martial's epigrams, which speaks of the hawk "being a servant of the fowler, and catching birds not for himself," seems a clear proof of the use of hawks for the chase; but, at the same

time, Pliny tells of the newly published and highly remarkable report, that in the neighbourhood of Eriza in Asia (which was a town in Caria on the borders of Lycia and Phrygia), one Craterus Monoceros hunted with the help of ravens, which found and drove out the game for him, and that when he rode out with them, even wild ravens joined him. A passage in Apuleius, in the latter half of the succeeding century, seems to point to hawking; but in the following description of a kind of hawking we have perhaps an explanation both of Martial's epigram and of Apuleius's words. This description, from the paraphrase of Oppian, runs thus: "An agreeable way of hunting is to take a falcon and place it under a bush; the little birds are afraid, and try to hide among the branches, but still they gaze at the falcon as if fascinated, like a traveller who suddenly sees a robber; and so the bird-catcher can take the birds from the trees at his leisure." Here we have the beginning of a still very imperfect mode of hunting with birds of prey. But in the fourth and fifth centuries hawking is mentioned by various authors as a completely developed, favourite, and wide-spread sport, which without doubt was derived from the barbarians. In the half-fabulous "History of the Saxons" by Widukind, we find a hunter with a hawk: A Thuringian went with his hawk out of the besieged town of Scheidungen on the Unstrut, which, trusting in the promise of peace, believed itself safe. He went to the river's bank in search of food; but having let his bird fly, one of the Saxons on the opposite bank presently caught it and refused to return it. The Thuringian said, 'Give me the bird, and I will tell you an important secret;' and the telling of this secret leads to the fall of the town—a kind of incident not uncommon in fairy tales.

During the Middle Ages hawking flourished all over feudal Europe; it spread from Germany and Byzantium to the East and to the nations of Asia, and was practised by Electors and Emperors, Emirs, Sheiks, and Shahs, down to the Nomads of the Steppe and the Bedouins of the Desert. Marco Polo found hawking the fashion in the capitals of Mongolian princes as far as China, as later travellers did in Mohammedan countries in the seventeenth and eighteenth centuries. In Europe it began to fall into disuse

as the gun became common, and it was at last forgotten; but it is characteristic that the names of the newly invented weapons were so often copied from those of the birds of prey which they had superseded; for example, the *falconetto*, the *moschetto*, musket (properly sparrow-hawk), the *terzeruolo* (properly male-hawk), the *sagro* (properly saker-falcon). In France, down to the Revolution, the king's falconers headed all ceremonial court processions, or rather persons bearing their insignia, for in reality there was no longer any *fauconnerie du Roi*. In England some few squires still go hawking in honour of venerable traditions, and procure the necessary trained birds from Belgium; while in Asia hawking is still a favourite sport in many districts (note 72).

THE PLUM-TREE.

(PRUNUS DOMESTICA, PRUNUS INSITITIA.)

THE plum-tree, *prunus*, is only once mentioned by Cato. At that time, therefore, there could be no common cultivation of the tree in orchards, or any consequent variety of kinds. On the other hand, the fruit is quite familiar to the poets of the golden age. Virgil speaks of *Cerea pruna*, waxen plums, and Ovid explains what they were: "Not only the black, but the nobler kind that borrow the hue of fresh wax." Virgil alludes to grafting the cultivated plum on the sloe-tree. At Horace's villa plums were to be seen on thorn-trees. Columella is acquainted with three kinds, while Pliny mentions a bewildering multitude of varieties. He speaks of Damascene plums as the finest, and this plum provided the Byzantines and modern Greeks with a general name for cultivated plum-trees. The name *prunus* accompanied the tree and the fruit from Italy to all the countries of West and Central Europe. The Romans, on their side, had borrowed the name from the Greeks, though Galen says the Greek *proumnon* meant by rights the wild plum; yet, as often happens in similar cases, it was also applied to the *Prunus domestica*. The usual name in Greek is *kokkymēlon* (the first half of which is an Oriental word), while the sloe on its native thorn was *brabylon*. The oldest authorities for the former are, first, a quotation by Pollux from Archilochus (700 B.C.); next, a fragment of Hipponax (middle of sixth century). In a treatise on plums, Athenæus informs us that the Rhodians and Sikeliotes called plums also *brabyla*. Theocritus does not confirm this. In one of the two passages of that poet in which the word occurs, the arrival of the beloved one is said to

be sweet as spring compared with winter, or the *mēlon* with the *brabylon;* the last word can scarcely mean the delicious plum; more likely *melon* is an abbreviation for *kokkymēlon.* In the other passage apples, pears, and *brabyla* are mentioned together, and nothing hinders us from supposing that the native sloes were meant. For the sloe the modern Romance languages use the diminutive of plum, *prugnola, prunelle;* the Engl. *bullace* is said to be derived from Celtic; *sloe,* Germ. *schlehe,* Old Germ. *slêhâ,* Mid. Germ. *slêhe,* agree letter for letter with the Slavic *sliva,* a plum; the French *crèque,* or perhaps the Latin *græcum* itself, is the original of the German *krieche,* and Old Pruss. *krichaytos;* the German *zwetsche,* which has a Slavic sound, but is not found in those languages, is perhaps a corruption of *damaskēnon,* as the English, too, have made their *damson* out of the same Greek word. The Italian *susina,* Spanish *endrina,* perhaps named after places or persons, agree in their endings with Pliny's *onychina, malina,* etc. The name *mirabelle,* Ital. *mirabella,* is said to be derived from *myro-balanos,* originally an Indian name of a fruit that was used for making an ointment, and then applied in Greece to a native kind of small yellowish plum. The Tyrolian *zeiber* is the *cibara* of the neighbouring Slovèns.

The *Prunus insititia,* with round fruit, and inured to the northern winter, may have been indigenous in Europe, but in its present improved form it comes, like the true plum, from Asia. Among the ancients the two plum-trees were the less accurately distinguished, as even the first bore, and still bears under cultivation, the finest of fruit; for example, the green-gage. Our French name for this plum, *Reine-Claude,* shows that in this branch also of orchard-culture France is the real classic land, either by reason of its climate, or the industrial labours of its inhabitants. If we go farther south, to the Mediterranean coasts, we find that the plum loses much of its delicious aroma. But the European region where the cultivation of plum-trees is carried on on a large scale, and is an integral factor in production, is the borderland of Austria and Turkey (see Thoemmel's "Bosnia," and Kanitz's "Servia"). There one meets with whole forests of plum-trees, the fruit of which, newly plucked, forms for four or six weeks the

principal food of the population, and, when dried, is sent in great quantities to Germany and even America. Pigs and plums are almost the only equivalents with which these countries pay for their foreign necessaries. But the chief use to which the abundant produce is put is the making of plum-brandy, the favourite *slivovica*. Though immense quantities of this article are consumed on the spot—for to what are those races more predestined than to the consumption of *raki?*—the exportation is also considerable. We do not know how old the culture of the plum-tree is in those countries, nor whether it goes back beyond the time of the Slav immigrations. But to make a drink from berries, in which the north-east of Europe is rich, is an Old Slavonian or East European national trait, that was already hinted at by Herodotus in his description of the countries beyond Scythia.

THE MULBERRY-TREE.

(MORUS NIGRA.)

THIS Medo-Persian tree was rather early transplanted to the West on account of its pleasantly sourish-sweet and purple fruit. It attains a considerable height, and its dark green foliage comes out late in spring, on which account, Pliny tells us, it was surnamed *Sapientissima arborum*, the prudent tree, that ventures out only when frost is no longer to be feared. The berries, which resemble raspberries, and in their native country are often an inch long, are wholesome and pleasant only when they are fully ripe; and then they must be eaten without delay, for the juice easily ferments and turns to vinegar. They are therefore plucked early in the morning, as they were in the time of Horace, and are bought and consumed before the heat of the day has spoiled them. The ancients were struck most with their dark purple colour; Horace and Martial call them *black*, Virgil and Columella *blood-red;* the Dictator Sulla had a very red face spotted with white, which a satirical Athenian poet compared to a mulberry sprinkled with meal. It was said that elephants whose trunks were smeared with mulberries before a battle became very eager for the fight, evidently because of the resemblance of the juice to blood. (1 Maccab. vi. 34: "And to provoke the elephants to fight, they showed them the blood of grapes and mulberries.") Luxurious ladies, and gay people who went masquerading, painted their temples and cheeks with the juice of mulberries; and the wine they drank, when too pale, was very likely also darkened with the red juice, as is even now the custom in the South.

If we inquire when the mulberry-tree was first introduced into

Europe from its Asiatic home, some accidently preserved poetical passages refer us to the time of the Attic Tragedy; others, a century later, to that of the Middle and New Comedy. But the confounding of the true mulberry with the sycamore, the Egyptian mulberry-fig, and, on the other hand, with the blackberry and raspberry, throws some doubt on the meaning of this testimony. The sycamore, a wide-spreading, shady tree with fig-like fruit, indigenous to Egypt, but also, where the soil allowed it, frequently planted in Semitic countries, such as Palestine and Cyprus, had not remained unknown to the Greeks in their intercourse with those regions. The tree was valued not only for its cooling shade, but for its fruit, which was an article of food among the lower classes, and also for its excellent timber, which was said to be both strong and light. In the Hebrew Scriptures the sycamore appears only in the two plural forms *shikmim* and *shikmot;* and if we compare with these the two Greek names, the earlier *sykaminos*, and the later *sykomoros*, it is at once apparent that these last were formed from the above Hebrew words, or rather from the corresponding ones in Syria or Lower Egypt.

Rightly or wrongly, the true mulberry-tree was thought very like this *sykomore*, and also borrowed its name. Theophrastus, and after him Pliny and Dioscorides, said, "The mulberry-tree is very like the sycamore, for it has a similar leaf, and resembles it in size and form." And Diodorus says distinctly, "There are two sorts of sycamines, one of which bears mulberries, and the other a fruit like figs." But the fruit of the mulberry also resembled that of the bramble-bush, *batos*, and the primitive name of this latter (Gr. *mora*, Lat. *mōra*), could easily be extended to the former. Phanias the Eresian, a pupil of Aristotle, wished to limit the name *moron* to the fruit of the wild sycamine, that is, to the blackberry, which was also very sweet; but the extension of name was too firmly rooted. Nay, the Alexandrians, as Athenæus reports, used *mora* exclusively for mulberries, probably because *sycamina* was already the fixed name for the fruit of the Egyptian sycamore, which was common among them. Even the word *batia*, which is quite literally the berries of the bramble, was now and then applied to mulberries. So that when Æschylus

in his tragedy "The Phrygians," says Hector was riper than the *mora*, we cannot be sure whether the poet was thinking of mulberries, and must therefore have known that fruit, or whether he did not more likely mean the native blackberry. When we remember that the mulberry is uneatable before it is fully ripe, and must then be rapidly plucked and devoured, an allusion to that fruit might perhaps be more suitable to Hector's fate. But another fragment of Æschylus, describing both white, red, and black *mora* all growing at once on the same bush (where Athenæus, who knew the context, tells us he was speaking of the *batos*, bramble), shows unmistakably that he meant blackberries. There are similar doubts about a fragment from a lost tragedy of Sophocles, and in a quotation from Epicharmus; but in poets of the New Comedy (from 350 B.C.) we at last find the mulberry clearly and unmistakably referred to: "You dye your cheeks with sycamines instead of paint," etc. Theophrastus, with more exactitude, distinguishes the *sykaminos* (mulberry-tree) from the *sykaminos Ægyptia* (sycamore); and the first, under the name of *morea*, is clearly to be recognised in a couplet of Nicander preserved in Athenæus, which calls it "the delight of the young, and the first herald of the happy fruit-time." And, in fact, the *Morus nigra*, while the last to bud in spring, is the first to bear fruit in summer. At the time of Galen *moron* was already the name in general use, and *sykaminon* nothing but a classical archaism: "I would rather say *moron*," he remarks, "which is familiar to all, than *sykaminon*, like the Attic writers of six hundred years ago; he is a fool who thinks more of so-called correct language, than of a healthy life." The more singular is the fact that the modern Greeks say *sykamenea* as well as *morea*.

When the tree was introduced into Italy, the name *sykaminos* was already obsolete; thenceforward it was called *mora*, like the raspberry and blackberry bush. If *moron* was a Doric word, and used by Epicharmus in Sicily, both tree and name must have reached the Latins through Magna Græcia; the *name* in this sense, that the example of the Greeks led the Latin-speaking nations to extend their own undoubtedly ancient word *morum* to the new fruit. Where any mistake was possible, they would very

likely say *morum celsæ arboris* (the m. of the tall tree), and call the tree itself *morus celsa*, whence probably its Italian name of *gelso*. The ancient poets often mention the fruit; Ovid, in the fourth book of his "Metamorphoses," tells us how the red colour of the mulberry originated, namely, in the blood of Pyramus, when he killed himself under a mulberry-tree for the love of Thisbe, quite an Asiatic legend, which we find repeated about other plants, and the scene of which, this time, is laid in Babylon, thus preserving a recollection of the tree having come from the far East. The mulberry-tree was never very delicate; for since that time it has crossed the Alps, and thrives not only in France but in England, Germany, and even Scandinavia, though sometimes in a hard winter it dies of frost. A thousand years later, it became more important for its foliage than on account of its fruit; for it made the immigration of the Indian-Chinese silkworm possible. Its first planters, who thought of nothing but the dark berries, little dreamt that one day the rough leaves would, by a manifold metamorphosis through a small caterpillar, be changed into a soft, glistening, costly tissue. It is true that the Romans had gradually become acquainted with silken robes worth their weight in gold, but they had not the least idea that the wonderful threads were nothing but spun mulberry-leaves. In course of time the *Morus nigra* transferred its office of feeding silkworms to a still later arrival from Central and Eastern Asia, the *Morus alba*, a sister-tree of smaller size, with smoother and tenderer leaves and white, honey-sweet fruit, which appeared in Europe towards the end of the Middle Ages. The Persian provinces on the Caspian Sea, and Italy and France in Europe, those silk-countries of the West, are now, in the districts where the industry flourishes, covered all over with cut and despoiled white mulberry-trees; it is only here and there in remote, lag-behind districts that the mulberry-tree of the ancients is still found nourishing a spinning-worm that produces a coarser kind of silk. A still more serviceable kind of *morus* than the usual white mulberry-tree, the *Morus alba multicaulis*, has been brought into Europe from Manilla, where it had been introduced from China, and is said to thrive well when properly treated (note 73).

ALMONDS. WALNUTS. CHESTNUTS.

In the Imperial age of Rome the three above-named fruits were clearly distinguished as *juglandes*, walnuts; *amygdalae*, almonds; and *nuces castaneæ*, chestnuts; but the farther back we go, the more these names become confused. So long as the trees themselves, which are so different in nature and appearance that it is impossible to confound them, were not generally known, their fruits being only brought by sea, in sacks or earthen vessels, to the market, say, of Athens, native words like *nut* or *acorn* were applied to the foreign fruits, with the addition of some epithet to signify the nature of the shell, or the country where the fruit was said to grow, or, lastly, the seaport that supplied them. But the application of these names was so variable, that the popular name of Jupiter's acorn, *Dios balanos*, which in Greece generally meant the chestnut, has in the corresponding Latin form *juglans* (Jovi-glans) the meaning of walnut. We find the almond mentioned earliest; under the name of *amygdalē*, it is already common in the Comic poets; but the names of the walnut, chestnut, and some better kinds of hazelnut, are jumbled together for a long time after.

If we compare the chief passages, we recognise at least *one* indubitable geographical fact, namely, that all these fruits came from the middle parts of Asia Minor, particularly from the regions of the Pontus, and at a comparatively late period. All the names used by the ancient authors point to that part of the world, and signify nuts or acorns named after Sardes in Lydia, or a district on Mount Ida, or Sinope and Heraklea, the two ports on the Black Sea; and brought from Paphlagonia, lying on the same sea. The district name of *Pontic nuts* is quite common, and is chiefly, but

not exclusively, used for a large kind of hazel-nut, as is also the name of *Persian* or *royal* nuts, because they came from a district subject to the Persian kings.

But whence came the word *castanea* (chest-nut), and when does it first occur? Xenophon with the Ten Thousand came to the Mosynoikoi, a Pontic nation, and there found a quantity of broad nuts stored up in lofts—intended therefore for the people's food—which later writers took to be chestnuts. More likely they were a large kind of *corylus* (hazel) which does grow in that region; at any rate, he does not use the word chestnut. In Theophrastus the words "similar to the Kastanaic nut" look very like a later gloss, as that is not his usual name for the chestnut. The poet Nicander, in the second century B.C., is the first who speaks plainly of the nut produced by the land of Kastanis. But where was that country? The Scholiast says: "Kastanis, a town of Thessaly." Now on the coast of Thessaly, at the foot of Pelion, in Magnesia, there really was a small harbour, or village as Strabo calls it, named Kasthanaia, Kastanaia, mentioned first by Herodotus. Theophrastus also says that in Magnesia and on the opposite island of Eubœa there grew many Eubœan nuts, that is, chestnuts. Must we suppose that the fruit took its name from that little-known spot, or rather did not people catch at any geographical name to explain it by? But our Scholiast adds a second explanation: "*Or* Kastanis, a city of Pontus, where chestnuts abound"—which is a great deal more likely in itself, if only we could find any trace of such a city in Pontus. Or have we here a hint of that mysterious *Kastamon*, south-west of Sinope, which was known as an important place at the Byzantine period, though the ancients did not mention it? That inscription in Boeckh, which he says contains no Roman traces, can at all events not be so very far off the Roman times, as it contains the word *Kastanaia*. The fact that the names *glans regia*, *Dios balanos*, and *juglans* for the chestnut are found in different Oriental languages would be significant, if such names as *bendak*, *pandek* for *nux Pontica*, the Arabic *mitkon* for *malum Medicum*, and the like, did not prove that Western names of fruits often found their way back to the East. Though not in the Semitic, yet in Iranic dialects, especially Old Armenian,

students of those languages would, we believe, discover the origin and an explanation of the word "chestnut."—In Italy towards the middle of the second century B.C. Cato never mentions either *juglandes*, or *castaneæ*, or *amygdalæ;* but he urges the planting of the following nuts: the *calva*, *Avellana*, *Prænestina*, and *Græca*. The "nuts of Avella" are the finer hazel-nuts transplanted from the Grecian coast towns to Campania, which we call filberts, and which the Greeks had derived from the Pontus; but how are we to explain the *nux Græca*? Ernst Meyer, in his "History of Botany," guessed that it might be the chestnut; but the later Roman writers invariably mean by it the almond. Columella calls the tree *amygdala*, the fruit *nux Græca*. Pliny "doubts if the almond could have existed in Italy in Cato's time, because he called it *Greek nut*." If then, as we cannot doubt, Cato's *nux Græca* was the almond, we have to choose between the walnut and the chestnut for the *nux calva*. Now the Scholiast on Nicander Alex. 271, divides chestnuts into four kinds, one of them the *gymno-lopos* or naked-shelled; *calvus* (bald, bare) might well mean the same thing; and *nux calva* may therefore be the chestnut. Again, in Plautus's "Calceolus" some one speaks of a *nux mollusca* hanging over his roof. Comparing this with the same Scholiast's "soft" chestnut, and Virgil's *castaneæ molles* (soft shelled), we may fairly suppose it was a chestnut-tree that shaded the house. In any case, the want of settled names proves that there was no general cultivation of these trees in Italy at the time of Cato and Plautus.—Walnuts under the name of *juglandes* are often mentioned by Varro, and once by Cicero, who relates that the elder Dionysius's daughters singed that tyrant's beard off with red-hot nut-shells; Virgil is the first to speak of chestnuts as *castaneæ nuces;* and a medical book of the beginning of the first century A.D. mentions *sweet* and *bitter almonds* for the first time. From that period the trees, as well as the names, were as common in Italy as the *noci*, *mandorle*, and *castagne* (walnuts, almonds, and chestnuts) are to-day. Early in January, if the weather be mild, otherwise in February or March, the almond-trees in every garden are white with blossom before the leaves appear; walnut-trees with their thick aromatic foliage shade the roads even in the

north; and in Italy, Spain, and part of France, chestnuts have so multiplied as to become real woods, which according to the latitude, belt the mountains at a higher or lower elevation; for example, the splendid chestnuts round the volcanic cone of Etna. The fruit of this latter tree has become such a popular food, that in France the idleness of the Corsicans is attributed to their chestnuts, and the destruction of those trees has been thought desirable—a similar thing to the idleness caused by the tropical banana. In fact, if a Corsican family possesses but two dozen chestnut-trees, and a flock of goats, which find their own pasture all the year round, their wants are fully provided for, and the father and each of the sons only desire to save up a small sum to purchase a—rifle. In the wild Italian Apennines the inhabitants also live for a great part of the year on chestnuts and chestnut-meal, and suffer greatly if a bad season brings a scanty crop. The shade of the chestnut-tree is welcome in the heats of summer, and, besides its fruit, it is valuable on account of its timber, which is used not only for fuel, but for tools and utensils of every kind. Therefore the tree is one of the most important acquisitions of culture that we have inherited from antiquity. It is true that the chestnuts of South Italy give the botanist an impression of their having been indigenous there from the very first; and Link, who is said to have thoroughly studied the south of Europe, informs us in his "Urwelt und Alterthum," that the primitive races in Europe, even before the pastoral period, fed chiefly on chestnuts. But this assertion is contradicted by the fact that neither Greeks nor Romans had an individual name for the chestnut-tree and its fruit. The truth is, that the climate and soil of the mountains of Southern and part of Central Europe were so favourable to the tree that it spread rapidly, escaped the tutelage of man, and has in whole districts become a real forest-tree.

It is not the only case of the kind. After the conquest of Teneriffe by the Spaniards at the end of the fifteenth century, chestnuts were planted in that island, "and now form a forest, the European origin of which is only betrayed by the European flowers that it shelters," as L. von Buch tells us in his treatise on the flora of the Canary Isles. We must not forget that two

thousand years and more have elapsed since the presumed introduction of this tree. Wait as long, and America will offer similar phenomena on a much larger scale. If the Greeks had found the chestnut-tree existing in their future country when they first arrived, they would certainly have mentioned its fruit in their legends. But we only hear of the acorns of the *drûs*, the esculent oak; and the aborigines, such as the wild Arcadians in their mountains and woods, are always called *acorn-eaters* (*balanephagoi*), even by the oracles. When Hesiod describes the blessings of peace and justice, the earth bringing forth fruits, the oak bearing acorns, the bees furnishing honey, and the sheep yielding its fleece—would he have forgotten to mention the chestnut, if it had then grown on the mountains, bestowing sweet fruit on mankind? And would the Latin poets, when describing the Golden Age, have limited themselves to mentioning arbutus-fruit, strawberries, cornel-cherries, blackberries, and acorns? That the regions south of the Caucasus, and the northern seaboard of Asia Minor, bring forth all kinds of nuts and chestnuts in great abundance and perfection, is proved by the unanimous testimony of travellers ancient and modern. Kolenati saw hazels in Armenia, whose trunks measured from two to three feet in diameter; Wutzer, during his travels in the East, found chestnut and plane-trees on his way from Nicæa to Brussa, the size of which amazed him: "These two are the giants of Western Asiatic vegetation, the plane-tree taking the first place, the chestnut the second. . . . It was chestnut-gathering time, and numbers of asses laden with sacks stood ready to carry the fruit, which was knocked down by men and boys, while women picked it up and packed it. The glowing sunbeams tried in vain to penetrate the thick foliage." From these regions chestnuts came overland through Thrace, Macedonia, and Thessaly to Eubœa, after which island they were called "Eubœan nuts" at Athens. In the present day the Greek chestnuts are small and the bitter shell is generally intergrown with the kernel; they are therefore not pleasant to eat. Of European lands, the best chestnuts, improved by culture, are furnished by the South of France (note 74).

The wild or so-called Horse-chestnut (*Æsculus hippocastanum*)

is one of those trees that Europe owes to the Turks. This beautiful, shady, early-budding tree came from Constantinople by way of Vienna towards the end of the sixteenth century, and very soon became a favourite ornament of gardens and public promenades —witness the chestnuts of the Tuileries Garden, and among them the celebrated Napoleon tree. The showy, upright blossom suited the Turkish taste, like the tulip; the prosaic name of Horse-chestnut is said to be derived from the Turkish custom of curing the cough in horses by means of its fruit.

THE CHERRY-TREE.

(PRUNUS CERASUS.)

THAT the cherry was brought to Europe by rich Lucullus, the conqueror of Mithridates, is known to every boy who has learnt anything of Roman history; though with a basketful of the sweet ripe berries before him the fact may be as indifferent to him as to the pilfering sparrow on the tree. Many ancient writers, from Pliny downwards, relate that after destroying the city of Cerasus, which stood on the Pontic coast between Sinopē and Trapezunt, the Roman general, L. Lucullus, transplanted cherry-trees from that neighbourhood to Italy—at any rate, a more valuable and lasting spoil-of-war than the colossal gold statue of Mithridates, the jewelled shield, or the many gold and silver vessels paraded at Lucullus's triumphal entry into Rome. We do not know whence Pliny got his account; Plutarch, who in his "Life of Lucullus" has collected a great number of details, is silent about the introduction of a new kind of fruit-tree by his hero. However, Pliny's story is supported by the fact that Cato *never* mentions cherries, Varro only *once*, but later authors *frequently*. The fruit, however, was not entirely unknown in the time of Lucullus; for, firstly, Athenæus quotes a passage from Diphilus of Siphnus, a contemporary of Lysimachus, whose kingdom extended to Western Asia, in which the dietetic qualities of cherries (*kerasia*) are explained, the preference being given to red and Milesian cherries; secondly, there was an indigenous Italian species (*Prunus avium*) not distinguished by the ancients from the Cornelian cherry-tree (*Cornus mascula*), the fruit of which had never been improved, and perhaps could not be. This sweet wild cherry,

together with the cornel-cherry and privet, are described by Theophrastus under the names of the male and female *kraneia;* the male tree had very hard, the female a softer wood. The inhabitants of Mount Ida said the female-tree bore fruit that was *sweet, fragrant,* and *fit to eat;* the Macedonians, on the contrary, said that both trees were fruitful, but the fruit of the female was uneatable. These sweet cherries of Mount Ida and Miletus were already improved at the time of Lysimachus, and may have been the *kerasia* meant by Diphilus; but those that Lucullus first saw in the Pontic kingdom, and bestowed upon Italy, must have been a more cultivated, larger, juicier kind of sour cherry. So soon as the fruit was known and appreciated, both kinds of tree were widely propagated, largely imported from Asia (which was fully opened soon after), and being grafted on the wild Italian species, produced a vast number of varieties, including the finest and most delicious. It was a special advantage in the cherry that it ripened so early in summer, affording the refreshment of its rich juice when other fruits were still backward. Coming from the Pontus, a region with hard winters, and being already in its commoner kinds indigenous to Southern Europe, the cherry-tree could go on advancing all through the middle and even some way into the north of the continent. In fact, at the time of Pliny, a hundred and twenty years after it first appeared in Italy, the cherry-tree had already crossed the sea into Britain; it grew on the banks of the Rhine; in Belgium people prized the "Lusitanian" cherries, so that the tree must have reached Portugal too, and formed a new variety there. Nay, in the Alps, and in the once barbarous countries beyond the Alps, the cherry-tree bears more aromatic fruit than near the Mediterranean, where the neighbourhood of the sea makes the climate too uniformly mild. At the present day, Tyrol, Switzerland, and the Upper Rhine are a fine cherry country, where the plant thrives particularly well. As the well-known *kirschwasser* (Swiss cherry-brandy) is made from the surplus of the cherry-harvest in Switzerland, so in Dalmatia, Trieste, and Venetia, the *maraschino rosolio* is made of the *marasca* (sour cherry), and in delicacy of flavour excels its Hungarian and Servian neighbour, the plum-slivovica.

Corresponding to the two principal European species of cherry, the sweet and the sour, we find two principal names running through the European languages. The Latin *cerasus*, Greek *kerasos*, cannot be derived from the Sinopean colony *Kerasous;* the town, on the contrary, took its name from the tree growing there. *Kerasos* seems to be only the Asia Minor form of the really Greek word *kraneia*, found even in Homer, Latin *cornus* (cornel-tree), the two words being closely related to *keras*, Latin *cornu* (horn), and descriptive of the horny hardness of the wood, which made it particularly suitable for javelins. Mark Theophrastus's description: "The wood of the *kraneia* is without pith, quite solid, *resembling horn* in closeness of grain and in strength; but that of the female *kraneia* has an internal pith, is softer and hollow, and is therefore unsuitable for spears." In the Homeric Hymn to Hermes, a spear has the adjective epithet *kraneïon;* and later, even *kraneia* by itself meant a lance. It is remarkable that in Lithuanian *ragotine* (spear) is, in like manner, derived from *rágas* (horn), so that the spear of hornbeam or privet must be a very old European weapon. Again, the German *Hornung* and Lith. *Raguttis* (February) are named after the hard-frozen earth during that month. Theophrastus mentions the word *kerasos* too, but it is clear from his description that he meant a forest tree, of which the bast was used for making ropes, and the red fruit, the size of a bean, with a soft kernel, was uneatable. It is the improved cherry, which was likewise a tree with red fruit, that the Greeks on the Pontus called *kerasos*, a name that passed into Italy with the tree, and from Italy to all Transalpine Europe. The Romance languages, as usual, formed their word from the adjective *ceraseus;* the German *kirsche* was taken not from them, but directly from the Latin, therefore at the time of the Teutonic Migration, or shortly after. The Slavic *criesnia* was borrowed from the German after the migration of the Slavs into the Danubian lands; the Magyar *tseresznye* was derived from the Slavic; and the Byzantian *kerasos* has passed into the Turkish, Persic, and Kurd languages, etc.—The origin of the other name, which is spread throughout Europe, and generally signifies the *sour* cherry, is more obscure; Ital. *visciola*, Old French *guisne*, now *guigne*, Span.

guinda, Germ. *weichsel*, Old Germ. *wîhsela*, Slav. *vishnia*, *vishnĭ*, Lith. *vyszna*, Mod. Greek *bisenon*, *bisinon* (also in Wallachian, Albanian, and Turkish)—all different forms of the same word without the Consonant-change that unborrowed congeners would exhibit. If we could find any connexion of meaning between the cherry and the fruit of the mistletoe, or rather—as that would probably be easy—if any fact assured us of its reality, then the word would not only be explained by the Greek *vixos*, Latin *viscus*, *viscum*, but our natural derivation of the fruit from Italy would be confirmed by the name. But if we must suppose the German word to come first—to which we are led by the French and Spanish initial *gu*—we have first to remove our guttural *h*, *ch*, which has here crept in before *sl*, as it has in the name of the river Wei*ch*sel (Vistula, Slav. Visla); while in the Low German *wispel* tree (bird-cherry), a German sound was procured by the addition of a *p* (note 75). In a fragment of the Comic poet Amphis the fruit of the *kraneia*, the cornel-cherry, is called *mespilon*: we do not know whether this might not furnish a clue.

ARBUTUS. *MEDICA.* *CYTISUS.*

(STRAWBERRY-TREE.) (LUCERNE.) (LABURNUM.)

To the hot and mountainous South are denied the flowery fields of the North, and the green meadows of the high Alps; the place of the latter is supplied by the evergreen herbs and shrubs which, long after the woods have retired before advancing culture, clothe promontories, rocky coasts, and the edges of ravines and water-courses. Of one of the most beautiful little trees of those regions, the strawberry-tree (*Arbutus unedo*), we do not know whether it always existed there, or migrated from the south-east in company with man. This tree—with its laurel-like leaves; its strawberry-shaped fruit, first green, then yellow, and then bright red; its branches clothed with fruit and blossom at the same time, like the lemon-tree; and its ever-renewed foliage, whose regular disappearing and appearing was correctly observed by Theophrastus—this tree is scarcely ever seen farther north than Central Italy; but in Arabia, as Juba (quoted by Pliny) exaggeratingly asserts, it attains a height of nearly 100 feet. Varro reckons the fruit of the arbutus—like acorns, blackberries, and apples—among the fruits of the primitive world, those offered spontaneously by the virgin soil, and consequently not produced and propagated by culture; and Ovid says the same. In the present day, both in Greece and Italy, the arbutus fruit is considered unwholesome, having a numbing effect, and is left to the birds, with whom it is a favourite tit-bit. This popular prejudice already prevailed among the ancients of the later period, as we learn from Dioscorides. Theophrastus, on the contrary, says that it may be fearlessly eaten; Galen tells us it was enjoyed by the country

people; and in modern times, northern travellers have eaten it with impunity. Petter, in his book on Damatia, says, "I and my family have often eaten the beautiful red berries of the strawberry-tree with wine, sugar, and cinnamon, and felt no benumbing effects."

From the difference in the names used by the Greeks and the Romans, we may conclude that the strawberry-tree did not grow in the country whence the original stock of the Greeks and Italians set out to wander in different directions. The Latin *arbutus*, *arbutum*, is evidently connected with *arbos*, *arbustum;* Benfey explains the Greek *komaros* as "twisted, creeping," which does not agree with the nature of the tree; Fick considers it a primitive Indo-European name. The Greek name for the fruit, *mimaikylon*, is first used by Aristophanes, and then by Theophrastus. (Benfey thinks it a combination of *mim-* with *akylos*, the edible acorn; but we might explain it as winter fruit, *maimasso.*) The *arbutus andrachne*, *andrachle*, was also known to the ancients—probably signifying the bush which yields good charcoal, *anthrax.*

In these evergreen bushes the flocks of the peasant found sufficient nourishment for their wants; but as they were not always to be found near home, the ancients hit upon the plan of stripping the trees planted in their gardens, and using the leaves, in addition to the expensive corn and flour, for feeding domestic animals. The ass and the goat, we may say, had set the example; the ass devoured anything, were it never so prickly, hard, or sticky, and the goat showed a strong partiality for the young leaves of bushes and small trees. The branches that fell during the pruning of the olives and vines were given to the animals, and in autumn the withered leaves were collected for the same purpose. This not proving sufficient, people began to plant the borders of the fields, ditches, and paths with single or double rows of trees, which furnished wood for firing and rural tools, and leaves for fodder and litter. Thus the southern modes of agriculture led to *leaf-forage* and *forest-gardening*. Cato already gives the following advice, which sounds strange to a northern farmer: "As long as you have it, give your oxen the foliage of elms, poplars, oaks, and fig-trees; and to the sheep green leaves;" and in another place he

repeats: "If you have no hay, give the oxen oak and ivy leaves." This sort of fodder is so often mentioned by the later agricultural authors, that its general use cannot be doubted.

In this feature we see clearly how much southern and antique husbandry differed, and still differs, from the modern husbandry of northern latitudes: the latter, which has larger space, receives its gifts more directly from the hand of nature; the former owes everything to itself, and lives as if in a second, self-created world, from which rude nature seems to be infinitely distant. But even the ancients must have found that not every kind of leaf was calculated to render the plough-ox strong, the butcher's-ox fat, and the milch-cow generous in her yield; and this gave occasion to introduce from the East those forage-plants which were better suited for the purpose. Such acquisitions were the *mēdica* or lucerne and the *cytisus*, both of which were unknown to Cato, but are mentioned by Varro, and therefore must have been introduced into Italy in the interval between the middle of the second and the middle of the first centuries, B.C. The *Mēdikē poa* (Median grass), Latin *Mēdica*, *Medicago sativa*, came, as the name indicates, from Media, from the well-watered, verdant districts south-east of the Caucasus, which Strabo describes as so charming, and in which he expressly says that the highly-valued lucerne grew. It was said to be especially beneficial to horses, and its extension is attributed to the horse-breeding Persians, more particularly to the wars of King Darius. This report is confirmed by the Persian name for the lucerne-clover, *aspest*, literally *horse-fodder*, as well as by the high tax laid upon the cultivation of the plant by the Sassanid King Chosroes I. about the middle of the sixth century. Nöldeke, in his history of the Persians and Arabians at the time of the Sassanides, translated from the Arabic chronicle of the Tabari, says that in considering the fiscal treatment of the lucerne, the immense importance of horse-breeding in the true Irân must be remembered. Among the Greek authors, lucerne is first named by Aristophanes, and then as horse-fodder; Aristotle mentions it repeatedly, but rather in a disparaging way: it was good for bees, but the first cuttings were worth nothing, and it deprived animals, particularly the ruminants, of their milk. The opinion held in

Italy differed from the above in so far that it was thought feeding with lucerne caused sheep at least to give *more* milk (Varro). In the following century Columella is full of praise of the lucerne: "Once sown, it lasts ten years; it is mown four times a year regularly, sometimes even six; it does not exhaust the soil, but rather enriches it; it makes lean cattle fat, and heals the sick; one acre of it will keep three horses the whole year." Possessing all these qualities, it could not but be industriously planted, particularly in sunburnt districts that were dry in summer, and which, though producing fresh fodder sufficient for the climbing sheep, were barren for the horse and ox. The lucerne, having very deep roots, is not afraid of drought; it is even now planted in Italy, though much more rarely than it was in ancient times; the names given to it in different districts, besides medica, such as *erba spagna*, *fieno d' Ungheria*, seem to imply fresh importations in modern times. The Spanish *mielga* is only a corruption of *Medica;* the equally Spanish *alfalfa* is derived from the Arabic, but perhaps means another plant. The French *luzerne*, which has been adopted in English and German (Provençal *lauzerdo*), is etymologically obscure, for a derivation from the Swiss canton Lucern, or the little Piedmontese town and river Luzerna, is not, as far as we know, historically confirmed. Probably the cultivation of clover, which seems to have originated in Belgium, has interfered with that of *Medicago sativa* in the north of Europe.

The *cytisus*, *Medicago arborea*, is a shrub whose foliage is unanimously praised by ancient poets and technical authors as both wholesome and pleasant to domestic animals. Like the mulberry-tree in silk districts and the tea-plant in China, it was cultivated solely on account of its leaves, and had to submit to being ruthlessly robbed of them at stated times. It was polled and kept low, the ever-plentiful new sprouts being principally used. It was good not only for animals, but for fowls and bees; and its specific effect in increasing the quantity of milk was so striking, that even human nursing-mothers drank a decoction of the leaves, mixed with wine, to strengthen and further the growth of their offspring. It supplied green fodder for eight months in the year, and the dried leaves gave good nourishment during the

other four. At the same time the cultivation cost little, for the tree throve on the poorest soil, and was insensible to bad weather and climatic extremes. Columella and Pliny express themselves much in the above manner, and the latter adds, that it was all the more surprising that the cytisus was not more frequent in Italy. The plant is said to have appeared first in Kythnos, one of the Cyclades, and thence to have gained the other islands, and finally continental Greece and Italy. There is no report of its having reached Kythnos from any other place, nor at what time the first utilization and extension of the plant occurred. The word *kytisos* is found in one of the pseudo-Hippocratian writings, the period of which we cannot determine; it then occurs in a fragment mentioning the flowers used in a wreath, by the Comic poet Cratinus; and in the celebrated goat-chorus by the poet Eupolis. Aristotle and Theophrastus both mention the cytisus; and an Athenian named Amphilochus wrote a treatise on that plant and the Medica, but we do not know when he lived. Some mention of the cytisus by Democritus does not prove a greater age, for the agricultural works that bore the name of that celebrated philosopher were later counterfeits. Perhaps the Isle of Kythnos acquired the name of being the first home of the cytisus or of its cultivation from a kind of etymological legend. The Greek *kytisos* looks like a native word, and may be akin to *kotinos*, the wild olive, and Latin *cotinus*, *rhus cotinus*; but it may be derived from one of the languages or dialects of Asia Minor, perhaps like *kerasos* in relation to *kraneia* and *cornus*. In modern husbandry, as far as we know, the cytisus no longer plays any part, but it is an ornamental garden-tree. The praises lavished on the tree by the Romans, who therein imitated the Greeks, perhaps merely express their pleasure at the newly invented fodder-culture *in general*, and its surprisingly beneficial and lasting effect on the prosperity of agriculture.

THE OLEANDER.

(NERIUM OLEANDER.)

In Greece and Italy, the oleander, or rose-laurel, not only adorns gardens, but fringes the roads and the dry beds of rivers with its fragrant rose-like blossoms and the faint brilliancy of its long evergreen leaves. Like many other plants of those countries, it halts midway between a cultivated and a wild state; that is, when once introduced, it was able to help itself and adopt the appearance of a free child of nature. In such a state it was found by Pliny, who at first sight believed the little tree to be indigenous to Italy, but remembering its name, which is Greek, *rhododendron*, rose-tree, or *rhododaphne*, rose-laurel, he recognised that he had before him a stranger come straight from Greece. A contemporary of Pliny, the physician Dioscorides, also knows and exactly describes the tree, which, while poisonous, yielded an effective medicine, and like the true laurel, and especially the rue, was an antidote against the bite of a serpent. "A well-known bush," continues the description, "which has longer and thicker leaves than the almond-tree. It grows in gardens, on coast-lands, and beside rivers; its blossoms and leaves have a bad effect on dogs, asses, mules, and most quadrupeds; but, taken with wine, they are wholesome for men against the bite of animals, especially if mixed with rue; but when the smaller animals, like goats and sheep, drink of this, they die." It was the general opinion, which is even now prevalent, that the oleander was hurtful to animals. Palladius even mentions a means of destroying mice by stopping up their holes and passages with oleander leaves; and Lucian's laughable story of the transformed ass, who breaks hungry into a garden and is afraid of the oleanders

growing there, is the origin of the name *amazza l'asino* (kill-ass), still used in South Italy. So in the Roman Imperial time the rose-laurel was as well-known and common as it is now. If we turn to the older Greeks, from whose language the names of the tree had come, we find not a hint of acquaintance with this very noticeable plant. In the long lists of plants observed or only casually mentioned by Theophrastus there is not one that resembles the oleander, for the plant growing on the Isle of Lesbos and elsewhere, and called *euonymos*, which is also deadly to sheep and goats, but has flowers like the white violet that "smell of murder" (which Pliny translates, *pestem denuntians*), is no other than the *Euonymus latifolius*, or spindle-tree. As little do we meet with any remark that could apply to the oleander in Aristotle, in the Comic poets, or any of the early poets and prose writers. The other Greek name, first used by Pliny and Dioscorides, *nērion*, might induce us nevertheless to attribute a great age to the plant in Greece; for if it is connected with the tragic *nāros*, *nēros* (flowing), with Nereus the water-god, and with the Nereids, goddesses of the wet element, and therefore signifies water-plant, it must belong to the early period of word-building out of which those antiquated witnesses in the shape of word and fable were transmitted to posterity. But though the oleander loves to weave its long flowery fringe on both sides of the brook, or of the pebbly ravine down which the torrent rushes perhaps only for a few hours, it is no real water-plant, but also climbs the mountains; and is it possible that the pretty tree, with its almond-scented blossoms and its deadly leaves, should have been common in Greece so long without leaving a trace in literature and legend? We learn from a late author, Ptolemæus Chemius of Alexandria, who lived in the latter half of the first century A.D., and collected all kinds of legends, personal anecdotes, and curious traits (fragmentally kept in the library of Photius), that a *rhododaphne* grew on the grave of Amycus, and whoever ate of it became very handy with his fists. It is the same Amycus and the same grave mentioned before in connexion with the laurel. What was attributed there to the laurel, the quality of confusing the senses and stirring up strife, is here attributed to the oleander; but we do not know how old this

variation may be, nor from what obscure source Ptolemæus may have derived it. All this makes it not improbable that the oleander migrated to Greece from Asia Minor, and especially from the Pontus, the fatherland of poisons and antidotes. There, for example, lived the Sanni, a people whose honey had a stupefying effect, the cause of which was believed to be the blossoms of the oleander bush, of which *all the woods were full* (note 76).—The oleander still grows luxuriantly in Asia Minor alongside the brooks and on the mountains. Further south, in the sphere of the Semitic races, the Arabs call it by names evidently derived from the Greek daphne, *difna*, *difleh*, *defle*, so that it cannot have been introduced there till they became acquainted with the Greeks.

From all that has gone before, we may conclude that the oleander first came to Greece during the period between the time of Theophrastus and perhaps the last years of the Roman republic; and proportionately later into Italy. The oldest literary mention would be that in the Virgilian "Culex," if we could be sure that that poem *was* a youthful production of him to whom it is ascribed (note 77). Leaving this aside, the name of the oleander first appears a century later in Scribonius Largus, while it is still wanting in Celsus; soon after, as already remarked, the plant is known to every one in Italy; it was first planted in gardens as an ornament, then it propagated itself in the open country, and the more rapidly as it was spared by the goats and asses, those enemies to all young saplings; and from that time the light-red oleander roses, mixed with the soft blue blossoms of the *Vitex agnus*, gleam like winding reddish ribbons on the twin banks of the mountain torrents of Southern Europe. But the people in Italy gradually changed the difficult Greek word *rhododendron*, with a leaning to *laurus*, into the modern *oleandro*, *leandro*, which passes current in all languages and even in scientific botany; only the modern Greeks usually say *pikrodaphne*, bitter laurel.

THE PISTACHIO.

(PISTACIA VERA.)

THE delicious pistachio nut, which serves the confectioners and ice-cream makers, even in northern countries, as one of their finest ingredients, grows on a small tree with spicy-smelling leaves, and belonging to the family of the terebinthaceæ. The nut is about the size of a hazel-nut, of an oval, three-sided figure, and contains a green, tight-fitting, almond-like kernel. The original home of the tree is the warmer part of Central Asia; its name seems to be Persian (note 78). If we are not deceived, it was highly valued for its fruit in Semitic Syria in the time of the patriarchs, and again quite late, when the Roman republic was changed into an empire. But as the elder Greeks know nothing of the pistachio, commerce cannot have brought the fruit out of Asia in those early times. Only after Alexander the Great had opened the heart of that continent do we find the first notice in Europe of the tree and its nuts, which some compare to the almond, others to the pine-nut; and it is not till the beginning of the first century A.D., that we hear of one Roman bringing the plant itself from Syria to Italy, and another at the same time to Spain.

When Joseph's brethren, driven by famine, went for the second time to Egypt, they took with them costly presents to gain the favour of the vizier, whom they little suspected of being their brother. Among the "choice fruit of the land" mentioned on this occasion, there stand, side by side with almonds, *batnim*, translated in the Septuagint, the Vulgate, and the Arabic and Syriac versions, *terebinth-berries;* but as these berries, though eaten in some districts, cannot be reckoned as dainties worth offering, Bochart tried to prove that what was meant was the

pistachio-nut. Olaus Celsius agreed with him, and since then the matter appears settled. But one circumstance looks suspicious, namely, that after the time of Jacob and Joseph the tree seems to have vanished, the Greeks being unacquainted with it; and that Theophrastus, evidently in consequence of Alexander's conquests, is the first to hear of this new and wonderful species of terebinth, and that too not from Syria, but from Bactria. Thus we cannot avoid speculating whether the tree was not first brought by the Persian, or even the Greek dominion into the neighbourhood of the town newly-founded by the Greco-Syrian kings, Berœa or Chalybon, now Haleb (Aleppo). The passage in Theophrastus runs as follows: "But it is said that there exists a terebinth, or a tree resembling the terebinth, which is exactly like the latter except that the fruit is different, being like the almond. This terebinth is found in Bactria, and bears nuts like almonds, only that the shells are not rough, and the kernels taste far better than almonds, so that the natives make a greater use of them." The description is correct, but the name is wanting. This does not appear till the following century, when it is mentioned by Nicander; but still he makes the plant grow on the Indian river Choaspes, near Susa. The first person who mentions the *Syrian pistachio*, a century later still, is the stoic and historian Posidonius of Apamea in Syria, therefore a native: "In Arabia and Syria there also grow the persea and the so-called *bistakion* (therefore a new name), which bears a grape-shaped fruit, white-shelled and long, similar to tears (?), which hang one over another like grapes; inside they are green, and, though inferior in taste to pine-kernels, have a finer smell."

Later authors, such as Dioscorides, Pliny, Galen, etc., all know that Syria, and especially Aleppo, produces the fruit in perfection. Vitellius brought the tree to Italy, and the Roman knight Flaccus Pompeius at the same time to Spain. Lucius Vitellius, who was afterwards censor, was legate in Syria under Tiberius, and made use of his stay in that province to transport many of the native garden plants to his estate near Alba Fucensis. We are not told whether the pistachios flourished there; but as Alba is not far from Lake Fucinus (the Lago Celano lately drained) amidst the

rugged Marsian mountains, and as Northern and Central Italy are to this day too cold for the pistachio, Vitellius probably had but little joy of his importation. The tree could be more easily naturalized in Calabria and Sicily, which actually export the fruit, but it is not considered so aromatic as that of the East. As the pistachio, like all the terebinthaceæ, is a dicœcious plant, the hand of the gardener secures its fructification by bringing the panicle of the male tree in contact with that of the female. It is very usual to improve the common turpentine-tree with a graft of the pistachio. Whether the Sicilian pistachios are derived from the time of Vitellius, or from Roman times at all, and whether they are due to the Arabian period, might be open questions, especially as the Sicilian *fastuca* resembles the Arabic name, were it not that Palladius in his books *De Re Rustica* repeatedly gives directions about the planting and cultivation of pistachios. He possessed, as he himself says, estates in Sardinia; and the delicate Median-Syrian tree might well find a second home on that warm island. If the East had not so completely degenerated in horticulture, as in everything else, the planting of pistachio trees might be extremely profitable among a people so passionately fond of sherbet and all kinds of sweets. The pistachio plantation of Aleppo is still celebrated far and wide. Polak says of Persia, "The inhabitants of Kaswin and Damgan exclusively cultivate pistachios, *of a quality not to be excelled.*" In that country, therefore, we must seek for the home of the tree.

The nearer and more distant relations of the pistachio belong to the characteristic vegetation of the Mediterranean; there is the *pistacia lentiscus*, the so-called Mastich-tree, which is frequent in the shape of evergreen bushes on the coasts of South Italy; there it produces no mastich, but only a coarse oil, at best fit for burning; the *pistacia terebinthus* or Turpentine-tree, which in Italy often sheds its leaves, and is only a true evergreen in the South, producing while in Europe neither turpentine nor edible berries; the *rhus cotinus* or Periwig-tree (any one who has seen it after blossoming, when it looks like a tumbled head of hair, will know why it is so called); and lastly, the *rhus coriaria*, the true Sumach, whose leaves, dried and powdered, afford the best tan for

the fine dyed goat-skin leathers, morocco, and cordovan, now so largely manufactured in Sicily, and forming one of its most considerable exports.

Whether these balsamic, evergreen, tan-containing trees or bushes, the ornaments of southern rocky coasts, belonged to the European flora from the very beginning, or whether, like the myrtle, they were first brought from Asia by the hand of man, and then went wild, is a matter of doubt. In Europe they cling to the warm southern seaboard of that continent, and do not venture far north as true Italian plants are wont to do; they appear in the form of bushes, while their brothers in Asia grow into stately trees; they produce no balmy resin, no edible fruit, no fragrant oil, or only in proportion as they approach the warmth of Asia; sufficient reason for their introduction may be found in their medicinal virtues, their technical uses, the aromatic scent and taste of their resin and berries, and finally, religious superstition. Among them the sumach is technically the most important; the terebinth historically the most interesting. The *Turpentine-tree* takes us back to the oldest times of Persia. The Persians are terebinth-eaters; when Astyages, King of the Medes, sitting on his throne, witnessed the overthrow of his army by that of Cyrus, he cried, "Alas, how brave are these terebinth-eating Persians!" Ælian says, "The Arcadians eat acorns, the Persians terebinths." Among other laws engraved on a bronze column in the palace of the Persian kings was a list of the articles to be furnished daily for the royal table; it includes terebinth-oil. The Persian youth were constrained to live in the open country and feed on terebinth-berries, acorns, and wild pears. Terebinths grew on the Paropamisus. When Alexander marched to Bactriana, he passed through a terrible mountain wilderness, where no trees grew except terebinth-bushes. In the time of Dioscorides, the tree, especially in the regions that form the dwelling-place of the Semitic races, furnished the highly-valued turpentine resin: "The resin of this tree comes from Arabia Petræa; but it also grows in Judæa, Syria, Cyprus, Libya, and the Cyclades;" and still earlier Theophrastus had compared the strong, tall terebinth-trees near Damascus with the low terebinth-bushes of Mount Ida and

Macedonia: "The terebinth is small on Mount Ida, and in Macedonia twisted and like a bush, but near Damascus in Syria it is tall, stately, and frequent; it is said that in that place is a mountain covered with terebinths, near which nothing else will grow." In the Old Testament the tree has a religious significance, which increases the more the older the period in question. The berry-bearing terebinth, like the acorn-bearing oak, from which it cannot always be distinguished, is the primitive tree under which the Divine presence was revealed, the altar erected, and the sacrifice offered. Abram removed his tent, and came and dwelt under the terebinths of the plain of Mamre which is in Hebron, and built there an altar unto the Lord (Genesis xiii. 18). And there the Lord appeared unto him, and gave him His promise (Genesis xviii. 1). The spot where Abram's tree had stood was sacred for many centuries after; the terebinth there was said to be as old as the world; Josephus says, "But six stadia from the town a very great terebinth was shown, which is said to have stood there since the creation of the world;" and Eusebius, "Therefore to the present day, the place is held sacred by the surrounding inhabitants, because of the vision beheld there by Abraham; and the terebinth is also still to be seen." Even Gentiles from a distance, Phœnicians and Arabs, gathered there and sacrificed animals, offered wine, and cast gifts into the spring; and, as usual, trade and barter were combined with the religious ceremonies. This worship of tree and spring was such an abomination, that the Emperor Constantine the Great, at the instance of his mother, St. Helena, caused the altar to be destroyed, the statues to be burnt, and a Christian chapel to be erected on the spot. Another sacred terebinth was that of Jacob at Shechem (Gen. xxxv. 4), under which, in Joshua's time, stood the ark of the covenant, and a stone altar was erected by that hero (Joshua xxiv. 26); there in the time of the Judges all the men of Shechem gathered together and made Abimelech king (Judges ix. 6). Again, the angel of the Lord came and sat under a terebinth-oak at Ophrah, and Gideon built there an altar, after he had cast down the Ashera of the Midianites (Judges vi. 11–27). The dead were buried under terebinth-oaks (Gen. xxxv. 8): "But

Deborah, Rebekah's nurse, died, and she was buried beneath Beth-El under an oak (terebinth), and the name of it was called Allon-bachuth (the oak of lamentation)." In later times, when the worship of Jehovah had become more spiritual, the prophets are especially indignant that trees, among them the terebinth-oaks, are sacred in the eyes of the heathen, Hosea iv. 13: "They sacrifice upon the tops of mountains, and burn incense upon the hills, under oaks, and poplars, and elms (terebinths), because the shadow thereof is good;" and Ezekiel vi. 13: "Then shall ye know that I am the Lord, when their slain men shall be among their idols round about their altars, upon every high hill, in all the tops of the mountains, and under every green tree, and under every thick oak (terebinth)." This very veneration may have early contributed to the propagation of the tree on the coasts of Europe. But if, even in Asia, it yielded the costly, healing, pure turpentine in small quantities only, in Europe it altogether lost the power of secreting it, and was stunted in growth, except perhaps in some of the Greek islands, such as Chios. What was understood by the Romans, and now also, under the name of *turpentine*, is gained from the *pinus picea* or the *larix*, and of course does not come up to the genuine terebinth. The resin for violins, called *Colophonium*, bore the same name in antiquity, *Kolophonia pissa*, because, as Dioscorides reports, it was procured from Kolophon in Asia Minor.

The *Mastich-tree* is first mentioned by Herodotus under the name of *schînos*. Its resin, *mastichē*, derived its name from the custom of chewing it (*mastazo*, to chew; *mastax*, mouth), and the favourite tooth-picks were made of its wood. The inhabitants of Chio, where much mastich is produced, are constantly chewing this resin, which, they believe, not only sweetens their breath, but improves their health. The custom, like that of chewing betel-nuts, is part of the system of Eastern laziness, but may be honourably contrasted with the originally American but now world-wide habit of smoking tobacco. The Latin name of the tree *lentiscus* (from *lentus*) comes either from the tough and sticky quality of the resin, or from the flexibility of the branches, which are much used for riding-whips.

The *Periwig-tree*, *rhus cotinus*, we find mentioned by Theophrastus under the name of *kokkygea*, a tree that furnished a red dye, and whose identity with *rhus cotinus* is seen by his mentioning its *pappos*, the large reddish tuft of the fruit-panicles, from which the tree takes its modern name.

The *Sumach*, *rhus coriaria*, is very early mentioned under the name of *rhous;* for instance, by Solon at the beginning of the sixth century. The berries formed a spice, *hēdysma*, which improved the taste of food, like myrtle-berries, or like pepper and lemon in modern times. *Erythros*, red, is a frequent epithet of this fruit, and perhaps the name *rhous* is derived from the same root, and was formed either in Greece or in some kindred language of Asia Minor. Then the meaning would correspond to that of *kokkygea*, for the trees are nearly related. The leaves of the tree (which, from its native country is called by Celsus the *rhus Syriacus*) were used even by the ancients for tanning; but that it was planted in Sicily, where it now yields the finest crop, only after the Arab or Middle Greek period, is betrayed by the name *sommaco*, *sumach*, being exactly the same as the Arabic *sommâq* and Byzantine *soumaki*. The islands of Sicily and Sardinia, as well as many provinces of the Pyrenees peninsula, seem as if created for the cultivation of the sumach-tree; for, like the Opuntia-cactus, it prefers barren rubble, and a dry rocky bottom to any other soil, and therefore finds in those regions almost unlimited space for propagation. Indeed, its cultivation has made enormous progress during the last generation; in the year 1875 Palermo exported sumach to the value of more than 17,000,000 lire.

Among the means of fumigation, the *thymiamata* and *aromata* of the warmer parts of Asia, the ancients often mention the *storax-resin* (Greek *styrax*), which the Phœnicians of Herodotus's time exported to Greece. But perhaps the Phœnicians had also attempted in early times to plant this Syrian tree around their European colonies. It is true that Theophrastus, after mentioning the *storax* in his long list of Asiatic aromatic substances, adds directly after, that with the exception of the iris, none of them belonged to Europe. But near the Bœotian town of Haliartus, in a district about which there hang traditions of early Phœnician

culture and religious intercourse with Crete, there grew Cretan storax-trees (Plat. Lys. 28, 7), not far from the spring *Kissousa*, in which his nurses bathed the new-born Bacchus; and by this fact the Haliartians proved that Rhadamanthys had dwelt among them, and they could still point out his grave. Later on, storax still came from Crete, but was of course not considered the best kind. Probably the little trees of Haliartus produced no gum at all, but the wood may have served for lance-shafts. The Latinized form *storax* proves that this favourite incense for sacrifices came early to Italy, exactly as we drew the same inference from the Latin name for the quince-tree, which, according to the ancients, resembled the storax-tree.

PEACH. (AMYGDALUS PERSICA.) — *APRICOT.* (PRUNUS ARMENIACA.)

THESE two trees, as their names tell us, originated in the interior of Asia, beyond even the cherry-land, and became known in Italy during the first century of the Roman Empire. Neither Cato, Varro, Cicero, or any other author of the Republican period, nor any poet of the Augustan age, knew anything about them; and the elder Greeks, so far as their writings are preserved, were just as ignorant. It was only when the Roman Empire, after the overthrow of Mithridates, began to extend, directly or indirectly, to the valleys of Armenia and the southern margin of the Caspian Sea; and when the frontier between it and the Parthian kingdom began to fluctuate, and there was an exchange of warlike or peaceful relations,—then it was that the natural treasures of these strange and fertile regions were gradually disclosed, and bit by bit conveyed to Italy. The lemon, "which heavily lies like a golden ball," could be admired in the West before a European had ever beheld the tree as the bearded merchant at Archangel, next neighbour to the eternal snow, cuts fresh slices of lemon into his Chinese tea;—not so the soft apricot and melting peach, for, as Pliny says, *non aliud fugacius* (nothing decays so rapidly). However, towards the middle of the first century A.D., gardeners with an eye to business had planted these fruit-trees in Italy, and took high prices for the first "Persian apples" and "Armenian plums" they produced.

In the case of such rare, unknown, aristocratic fruits, which only gradually became familiar to the eye and tongue of the masses, and in the absence of a regular scientific system, it is not

surprising that the names should at first be very fluctuating, and not become fixed till later. At first it was only known that the peach and apricot came from beyond the Asia (in the narrower sense) of that time, and they were therefore called *Persian* fruits; and apricots, which are similar and akin to plums, *Armenian* fruits as well. The name Persian gave rise to some confounding with the Egyptian Persea, and probably with the Median apple or lemon, and later authors had to contradict the superstitious or incorrect ideas caused by such mistakes. Then varieties were produced, the peculiar qualities of which were expressed by suitable surnames; thus the growers of the finest sort of peaches called them *duracina*, because they had a thicker skin, or firmer pulp; and another kind, which ripened early, was named *præ-coqua*, or *præ-cocia*. This last, a technical expression applied to many other things besides, the first portion of which exactly corresponds to the Greek *proï*, early, was especially suited to the Apricot-tree, which not only blossoms early like the almond, and is therefore *proï-anthes*, but also ripens its fruits early, *proï-karpos* (like the French *hâtiveau*, hasty pear); so the word became at last the regular name of the Apricot, and Dioscorides (60 A.D.) could say: "We Greeks call them *Armeniaca*, but the Romans *prai-kokia*." But, further, the Greeks took to borrowing some of these names that had become fixed in Italy; for in the revolutions of time the movement had become retrograde, and Oriental products could come to Greece from the West, and then they passed them on to the East, which had originally itself possessed the things so distinguished, but had become unconscious of the fact. (Peaches, for instance, of which the Romans had named the best kind *duracina*, were now called in Middle and Modern Greek *rhodakina*, doubtless a mere transposition of the Latin *duracina*, to which there was a further inducement in its resemblance to *rhodon*, rose.) *Præ-coqua*, then, was changed by the Middle Greeks into *prekykkia*, *prokokkia*, *berekoka*, etc.; and, as the latter half of the word sounded like *kokkos* (berry), or *kokkyx* (cuckoo), it was even changed into *kokko-mēlon* (berry-apple), and *mēlon kokkygos* (cuckoo's apple), the old name of the plum. But out of one of those distorted forms of *præcoqua*, the Arabs made, with the help of the article, their

al-barqûq; and when that sherbet-sipping, refreshment-loving people began to lay out gardens in Spain, in the islands of the Mediterranean, and in South Italy, and to unload its wares in the harbours, the word came back to the Occidentals in its Arabic form, and thus completed its circle from West to East and back again: Ital. *albercocco*, *albicocco*, *bacocco*, Span. *albaricoque*, from which the French *abricot*, from that again the German *aprikose*, etc. The word *armeniacum* has also been preserved in the Italian *meliaca*, *muliaca*, just as the old *persicum* in the modern forms *persica*, *pesca*, *pêche*, *peach*, *pfirsich*, and in the Slavic dialects, *breskva*, *praskva*, *broskvina*, etc.

In the time of Pliny and Columella, there was already a kind of peach called the *Gallic*. It being rather remarkable that, in the very youth of the fruit, Gaul should have already produced a variety, it might be supposed that Gallo-Græcia in Asia Minor was meant; but then it would surely have been called *Galaticus*, and not merely *Gallicus*. The peach is a fruit that easily changes; accordingly a large kind of early peach had actually been produced in Provence, which the Italians named after the land of its birth. At present the fruit has divided into innumerable varieties, of which we will only mention the so-called Nectarines, *pescanoci;* which, as the ancients fabled, originated in the grafting of the peach on the walnut. Of all popular names for apricots the most interesting is the Neapolitan *crisuommolo*, derived from the Greek *chryso-mēlon*, golden apple. According to Pliny *chrysomela* was originally the name of a kind of quince; when that fruit became rare and the apricot frequent and a favourite, the poetical name was transferred by the imaginative Neapolitans to a variety of the latter fruit, namely, the so-called almond-apricot.

FRUIT-CULTURE. IMPING, GRAFTING.

If we look back on the long series of fruit-bearing trees with which Italy was enriched during the period of its greatest power and glory—improved apples and pears, figs and pomegranates, quinces and almonds, cherries, peaches, mulberries, plums, pistachios, etc.—we are not astonished that Varro should call Italy a great fruit-garden. This transformation was accomplished during the time when Rome rose to be the centre of Italy, and Italy the ruler of the world. The older Greeks were only acquainted with Italy as a country which, compared with their own and with the East, still bore a primitive character, and whose products consisted chiefly of corn, wood, and cattle. The Comic poet Hermippus, who wrote at the beginning of the Peloponnesian war, could only mention barley and beef as Italian exports. In Thucydides vi. 90, where Alcibiades points out to the Lacedæmonians the advantages of an expedition to Sicily and Magna Græcia, he appeals to Italy's wealth in corn and in timber for ship-building A century and a half later, Theophrastus counts Italy among the few countries that supply such timber. When Hiero II. of Syracuse launched the monster grain-ship so often mentioned in this book, no tree could be found suitable for the main-mast except in the mountains of Brettium (that is, in the forest of Sila, which now consists of larch-pines; but, as the finder of the tree was a swineherd, the larches must have been mixed with oaks or beeches). The wood is minutely described by Dionysius of Halicarnassus. In all Roman legends and traditions we hear of vast, inhospitable woods. The Ciminian forest near modern Viterbo, north of the Roman Campagna, in the South Etruscan region, is described by Livy as being in the year 308

B.C.—therefore after the time of Alexander the Great—more terrible and impassable than the German forests afterwards trod by the Romans. At the beginning of the Second Punic War, when the prætor C. Manlius marched to the relief of Mutina (Modena), which the Boii were besieging, his army was almost annihilated in the pathless woods.

And now, on the very site of these wildernesses with their produce in timber, pitch, game, and pasture, stood plantations of Oriental fruit-trees; in the place of the flesh and pulse diet of the ancients, men sucked the juices of refreshing fruits as in the South and the East. Those who contributed to this transformation were chiefly Asiatics themselves, that is slaves and freedmen native to Asia; Syrians, Jews, Phœnicians, and Cilicians. Italy was crowded with them long before Juvenal, who figuratively complained that things had got so far that the Syrian Orontes flowed into the Tiber. The Semitic slaves, with their industry, endurance, and patient resignation, seemed to be created for their condition. Plautus already speaks of Syrians as "the most patient race of men." Rude warfare was not in their nature; but skill in gardening, a delight in the quiet, loving occupation of training and tending plants, were a birthright of the Aramaic race, or rather the result of a world-old culture, and of the soil on which it had been developed. When the Roman aristocrats, returning home after their year's stay in those Eastern provinces, wished to have any of the fine fruits they had always had on their tables there brought over to Italy and their own villas, they found experienced gardeners enough, who assisted in transporting and planting them, and received their freedom, or at least a milder treatment, in return. The same talent in the Cilicians was in every one's mouth, after Virgil—in the beautiful and much-admired episode in the fourth book of his Georgics—had praised the garden of the old Corycian near Tarentum, and the quantity of fruit and vegetables he had enticed out of the sterile soil.

But the Syrian slaves brought with them, besides other sensual perversions of the East, the Oriental subtleties in the treatment of animals and plants. Not only castration, circumcision, and the breeding of mongrel beasts, but the lopping and dwarfing of

trees, and crossing of species by imping and grafting, had been early practised in Syria. Purposely produced monstrosities, a careful perpetuation of freaks of nature, an artful sporting with the power of growth—all this was indeed only the same impulse in a depraved form as that which originally made the olive and the date-palm fruitful, invented the caprification of the fig, produced double roses and violets, and so on. In the gardens of Italy, from the time of Cato to the period when trees were deformed by being clipt into the shapes of animals, etc., persistent attempts were made, not so much to express the pure feeling of Nature, as to cunningly seduce her, by strange and foreign ways, into producing forms and ends which she never intended. Tall trees were dwarfed, delicate fruits grown in monstrous size, and what could not be actually accomplished was at least pretended, and represented as possible. The gradual increase of this tendency is clearly shown in ancient works on the subject. Varro only went so far as to believe that pear and apple trees could be grafted on each other, but not that a pear could grow on an oak. In Virgil the strawberry-tree already bears nuts, the plane-tree apples, the chestnut beech-nuts, the ash pears, and the elm acorns. Columella says, first, that grafting is only possible where the bark of both trees is similar; yet presently he blames the ancients for limiting the possibility of success to trees of a similar kind: rather might any sprig be grafted on any tree; and then comes the description of a trick by which a fig-tree could be made to produce a branch of olive. Pliny professes to have seen a tree that bore on its different branches nuts, olives (*bacæ*), grapes, pears, figs, pomegranates, and several sorts of apples, *all at once*. Lastly, there is scarcely a tree mentioned by Palladius or in the collection of the Geoponica, of which it is not said that it can be made to bear such and such alien fruits. Pliny is quite shocked at this misleading and misusing of nature, as a kind of sacrilege. It is true, he was only a compiler; burdened by his task and the immense quantity of his material, he could not always be exact; his style is affected, and hence often obscure; still he not rarely shows a lofty spirit, and in the present case expresses the tragic feeling of a life completed on all sides and thoroughly exhausted of its contents. Italy, he means

to say, has gathered to herself all the plants of the world and tried upon them, with the utmost exertion of skill, all the formative and creative powers of nature;—What is there to expect? what more can come but nothingness? And, in fact, there came the thousand years of the Middle Ages, and in Syria the man had already arisen, whose teaching poured like a destructive foreign substance through all the veins of the Greco-Roman world, the true *ex ossibus ultor*, and not only for the burning of Carthage, Syria's daughter. So far as the old religion still survived, it also opposed this sporting with organic nature: trees that bore two kinds of boughs brought errors into the ritual for exorcizing and appeasing the lightning; and this scruple may have deterred many from such attempts. In the same spirit the Mosaic Law had once forbidden the pairing of what was dissimilar, the breeding of mongrels, the mixing of woollen and linen in one garment, the yoking together of ox and ass, and the *sowing of a field with two kind of seed* (Leviticus xix. 19).—Nevertheless, the eager effort at grafting and inoculation, crazy though it might be when it exceeded natural limits, contributed to increase the manifold variety and perfection of the now naturalized fruits. Fruit, that original ready-made food of man, who is beautifully developed only in zones where fruit trees flourish, was not only propagated and improved throughout Italy, and became what it is to the present day, a necessary part of even the poor man's daily meal; but also crossed the Alps to Central and Western Europe, wherever the climate, assisted by the foresight and industry of civilized men, permitted and even favoured its culture. The soil and climate of France now produce the finest fruit; England has carried this branch of cultivation also to the highest degree, and Germany follows at some distance the example of those two countries.

Tacitus found Germany too cold for fruit growing, and says that its inhabitants nourished themselves on wild berries, fresh game, and curdled milk; and, in fact, to this day North Germany cannot produce Italian figs, almonds, and peaches in the open air. In the Danube region most kinds of fruit thrive well, and the exportation thence of fresh and dried fruits to the German Empire already amounted, some years ago, to about 300,000

cwt., of the value of at least nine million marks. But the farther it travels north-east into the region of extremes of climate, with rigid winters and spring frosts, the more the fruit tree dwindles. In the villages of Muscovy Proper it never occurs to the peasants to plant a tree, or hope to celebrate a joyful pear or apple-harvest in autumn. Modern Europe has given up the attempt to graft nuts on oaks and the like; it also does not try to improve vines by inoculation as Cato did; it operates by judicious selection and tendance, and picks out the proper fruit for each locality. In speaking of each kind of fruit, we saw that those of Central Europe derived their names from Italy; and the same is true, for the most part, of the nomenclature of improving processes. The word *impotus* in the "Lex Salica," for *imp* or graft, Old High Germ. *impiton*, Middle High Germ. *impfeten*, Modern Germ. *impfen*, French *ente*, *enter*, Provençal *entar*, are all derived from the Greek *em-phytos*, *em-phyteuo*, in-plant. If we notice the regions over which this word extends—among Italian dialects it occurs in those of Piedmont, Parma, and Modena—we can easily believe that the invention it designates came to the Celtic inhabitants of Western Upper Italy and of the Rhone, and thence to the districts of the Upper and Lower Rhine, from some Greek seaport —and who can help thinking, first and foremost, of Massilia? The French and English *greffe*, *greffer*, graff, graft, seem also to have come from a Greek source (Diez). A second German word, *pfropfen*, to graft, *pfropf-reis*, a graft, leads direct to Italy and the Latin *propago;* and a third, *pelzen*, is from the Provençal *empeltar*, which itself is formed from *pellis*, the skin, *i.e.*, the rind of the tree. Not less interesting than these living witnesses to the influence of the classic South on cultivation, is a native Gothic word used several times by Ulfilas, in the eleventh chapter of the Epistle to the Romans, for the Greek *enkentrizein*, namely, *in-trisgan*, *intrusgjan*. It is wanting in all the other German dialects, but is found again in Slav countries, and is thus one of the significant instances of borrowing from the Slavic by an East German language. The meaning of *trisgan* was to slit, and of *in-trisgan* to insert in a slit. In the Slavic language there is developed, from this idea of splitting or bursting, that of crashing, also that of

lightning, as the splitting thunderbolt—New Slav. *tresnoti*, Russ. *tresnuti*, Bulg. *tresk*, Croat. *triskati*, etc.; and the Lithuanian *trukis*, *trukti*, seems to be the same word; perhaps also the Greek *terchnos*, *trechnos*, a branch. The same change of meaning from splitting to grafting is seen in another Slavo-Lithuanian root—Slav. *cepati*, *ceputi*, to split, *cep*, a graft; Lithu. *czepiti*, to graft, etc.

THE AGRUMI, OR ORANGE GROUP.

THE fancy of the Northerner, who, like all Hyperboreans for these two thousand years and more, longs for the beautiful South, is chiefly attracted by the golden fruit hanging on the Hesperian trees, a fruit which in his own foggy land he only receives wrapped up in paper at the mariner's or merchant's hand. And, in fact, what garden-tree can rival the orange in beauty and nobility? Tall and stately where the climate is mild enough and the soil rich, with dark, shining evergreen leaves, with snow-white flowers that smell like lilies, and blossom the whole year long; hung with fruits greenish at first, then ripening by degrees to brightest gold; whose rind, filled with volatile oil, has a penetrating odour, and whose taste varies according to the kind, from balsamic bitterness and strong but fine acidity to the sweetest nectar; with close, firm wood, and a length of life that far exceeds that of man—in what other tree of the South is the power of the sun, the soft breath of Zephyr, and the splendour of the sky, so concentrated and vegetatively represented, as in the Aurantiaceæ?

Every traveller who is happy enough to have seen the lemon-grove in the neighbourhood of Poros in the Peloponnesus, the agrumi of Messina at the foot of Etna, and those of Reggio on the opposite coast of Calabria, the gardens of Sorrento near Naples, and the enchanting orange-woods of Milis in the island of Sardinia, thinks of them ever after with delight.

The agrumi grove of Poros, about four miles square, stretches down the gentle slope of the mountains to the plain below, and from its lofty edge affords a splendid view over land and sea and towery cliffs; it is watered by springs from the mountains, divided into innumerable rills; the trees stand close enough for the boughs to touch, and they number about thirty thousand. The

orange trees of Milis are briefly but charmingly described by Alfred Meissner, in his "Durch Sardinien": "There are above three hundred orange gardens around Milis; the two largest belong to the Cathedral Chapter of Oristano and the Marquis of Boyle. I was taken first to one and then to the other. Both are small forests formed entirely of orange trees. Freely left to nature the tree has lost its stiff globular form; it stretches its boughs on all sides, and on its crown shine the golden fruit, the silvery blossoms. One walks under an uninterrupted, shadowy, glimmering roof of leaves. A thick carpet of fallen orange blossoms covers the ground; little brooks are led past the mighty black roots, and their murmur mingles with the song of the birds that dwell in the boughs. In this grove of the Hesperides you can walk freely, bending the boughs aside, which, rebounding, shower their blossoms in your face, or envelope you in an intoxicating cloud of perfume as you lie beneath in the shade of orange trees as grand as their brethren of the forest. The orange groves of Milis, possessed by different owners, contain altogether 500,000 trees. They yield on the average twelve million oranges a year. In the garden of the Chapter there is a tree which alone is said to bear annually more than five thousand oranges. The gardener, a priest, assured me that there were many trees whose age was proved to be above seven centuries. The patriarch of them all stands in the Marquis of Boyle's garden. Its trunk is so thick that a man cannot encircle it in his arms; its crown is as majestic as that of an oak. The walk through the orange woods of Milis seemed alone worth the journey to Sardinia. Sitting in a pavilion in the highest garden, I saw the most glorious of Campagnas stretching out for miles; the pleasant scene was magically illuminated by a beautiful sunset." The charming Puerto de Soller in the island of Majorca is said to equal Milis in the beauty and richness of its orange culture. There the gardens are situated on terraces, cut in the hot *débris* of the precipices, over which rush winter torrents. The towering rocks around reflect the heat, and the sun can penetrate the bottom of the valley, while a small river sends its threads of water to all sides through little water-channels and aqueducts. The annual exportation from the port of Soller is

said to amount to more than fifty millions of extraordinarily sweet oranges, which in 1867 were worth about a million francs when placed on shipboard, and about four millions when arrived at their destination. Unfortunately the gum-sickness has made great havoc among the oranges of Majorca during the last few years.

However, all these are only oases in Southern Europe, which is far from being a true orange country. The tourist must distinctly aim at it if he desires to indulge in the momentary enjoyment or enchanting illusion of a natural Hesperian forest. In Greece orange and lemon culture is neither carried on to any extent worth speaking of, nor is the fruit of any particular excellence; on the contrary, it is sometimes very dry, with a thick rind, sometimes sour or bitter. In North Italy, on the *riviera di Salo*, or west shore of the Lake of Garda, the so-called *giardini*, so pretty in summer, are after all protected by walls, and at the beginning of winter are further sheltered by a tile roof and side-walls of planks. It is true that the lemon-tree is frequently met with in the gardens of North and Central Italy, but always planted in large earthenware pots. In Sicily, though so warm, the dry summers and stormy winters are hurtful to the orange-tree, which therefore, except in a few favoured spots, is entirely wanting on the western and southern coasts. As this natural scarcity is apt to disappoint the expectant traveller, so is the *historical youth* of the tree in Europe, for it was quite unknown to the ancients in their best period, and only half known to later antiquity. The golden apples that Hercules received from Atlas, and those other Aphrodisian apples that made Atalanta halt in the race with her beautiful lover, were not *mala citria* as the ancients afterwards believed, still less were they oranges as we moderns have often dreamed. At the time of the introduction of such Oriental nature-myths, they were thought of as real—though idealized—apples, quinces, or pomegranates. Only when Alexander the Great, by his invasions and by setting up a Greek empire in the heart of Asia, had lifted the veil which hid the interior of that continent, did the European Greeks hear of a wondrous tree with golden fruit growing in Persia and Media. Then Theophrastus wrote his celebrated description of the tree, which was repeated, imitated, and made

an authority for five hundred years. "The East and South," says he, "possess peculiar animals and plants; Media and Persia, among other things, the so-called Median or Persian apple-tree. It has leaves like those of the andrachle, and sharp thorns; the apples are not eaten but smell sweet, as do the leaves also; if the fruit is laid among clothes, it protects them from moths; if any one has taken poison, it is an antidote; if you boil it and squeeze out the flesh into your mouth and swallow it, it improves the breath; the pips are planted in carefully dug beds, and watered every four or five days; when the plants are grown, they are moved in spring to a soft, damp, and not too light soil; the tree bears fruit all the year round, and is adorned with blossom, ripe fruit and unripe, all at the same time; those blossoms that have a kind of spindle in the centre are fruitful, the others not; the tree is also planted in earthenware vessels with holes, as palms are."—The only thing that strikes one in this careful description, written however at a distance, is, that the size, form, colour, and nature of the fruit itself is not more exactly described. Had Median apples been brought to Athens, and were they already familiar to Theophrastus's readers? Such a thing is hinted at in a fragment by the poet Antiphanes, whose date is somewhat doubtful; probably about the time of Alexander the Great.

A. Here, maiden, take these apples.
B. Beauties, too!
A. The seeds came lately from the Great King's land.
B. Nay, from the Hesperides!
A. Well, they do say
These are the "golden apples."
B. Only three!
A. The beautiful is always scarce and dear.

As the Persian Empire is thought of as still standing, and as during Alexander's expedition there was constant communication between Greece and the army in Asia, it is quite possible that Persian apples may have found their way to Athens in those very years. They are still a novelty exciting admiration, and compared to the fruit of the Hesperides. After the foundation of the Greek kingdoms in the heart of Asia, the Hesperian fruit no doubt

frequently appeared in the European markets; but still it was thought unfit to be eaten, and beautiful as it looked outside, the juice was disagreeable to the taste. The belief in its quality of destroying vermin, improving the breath, and rendering poison ineffectual, was also general in the West, as it had been in the East. Virgil's description of the tree and the fruit (Georg. 2, 126) is only a poetical imitation of Theophrastus: he calls the Median apple *felix*, lucky, because it counteracts the creatures of the Evil Spirit, such as poison, vermin, and impure breath; but its juice is *tristis*, *i.e.*, biting, and its taste *tardus*, *i.e.*, long retained. Where a superstition is strongly held, all experiments will of course confirm it. At Athenæus's imaginary "Banquet" of Deipnosophists (kitchen-connoisseurs), it is asserted "on good authority" that in Egypt criminals who happened to have tasted such fruit became impervious to the attacks of wild animals and poisonous snakes; that of two criminals condemned to death, one was provided with the antidote and the other not, and that the latter was killed on the spot by the bite of a snake, while the former escaped unhurt; and that the same experiment had been frequently made with the same result. When the Deipnosophists heard that, they applied themselves diligently to the Median apples on the table, scarcely, we may add, for the sake of the taste, and probably with many grimaces.

The second property of the fruit, that of driving away vermin, gave rise to the Latin name *citrus*, *malum citreum*, etc. The Greek word *kedros*, signifying the scented wood of the coniferæ (cedar, arbor-vitæ, etc.), which was not only itself impervious to worms, but protected clothes from them—this *kedros* was changed in Italy by popular corruption into *citrus* (as *kydonia* was into *cotonea*, quince, *Eurydike* into *Euretice*, *dada* into *tæda*, etc.). *Citrus* meant especially the wood of the *Arbor vitæ*, or *Thuja articulata*, which had from olden times been imported from Africa, and of which, in later days of wealth and luxury, costly tables were made. This wood, with its aromatic scent, preserved the clothes-chests of the wool-wearing ancients from their hereditary enemy, the moth. From this custom of laying bits of thuja and other woods among woollen tunics is possibly derived the expres-

sion *citrosa vestis*, *i.e.*, citrus-smelling dress, used already by Nævius in his epic of the Second Punic War. As the golden Median apple was laid among clothes for the same purpose—and the custom was continued into the beginning of the second century A.D. —and as the smell of the rind was similar to that of cedar-resin, the common people imagined it to be the fruit of the citrus-tree, and gave it that name, which was gradually adopted by educated people and even by the Greeks. Galen laughs at the learned affectation of saying "Mēdicon mēlon," instead of the universally intelligible "kitrion." His contemporary, the African Apuleius, who wrote a work "De Arboribus," still protested against the custom of calling the tree with the Median apples a *citrus*, the two trees being essentially different. But the name had become too fixed in popular language to be abolished, especially at a time which was characterized by a reaction from the pedantic to the popular.

But since when was the tree itself cultivated in Italy, and what species of the genus *citrus* was it to which belonged the fruit that was looked upon as the Hesperian apple, first in Athens, then in Italy, and, as Juba of Mauritania says, also in Libya?

If the elder Greek and Roman writers had ever seen the tree with their own eyes in Europe, they would not have held so long and so exclusively by Theophrastus's description of it; and still less would the name *citrus* ever have been applied to it. Pliny repeats the whole description of Theophrastus, with some additions, from which it appears that attempts had been made to cultivate the tree, but, as is often the case with first attempts, they had failed. Little trees had been planted in earthenware pots, but they had not thriven, or, at least, had borne no fruit. Another passage in Pliny speaks of it as *domos etiam decorans*. In what manner was this Median tree used to adorn the houses? Was it grown in tubs between the pillars of the hall, or was it only the *fruit* that was placed as an ornament on tables and cornices, and as *felix malum* to keep off the demons of destruction? We find that, a century or a century and a half after Pliny, the tree must, at least, have been planted in the villas and gardens of favoured districts. Florentinus, who lived in the beginning of the third century A.D., describes the cultivation of the *kitreai* in a manner

that shows it to have been exactly similar to that practised nowadays in North Italy, for example, in the *giardini* on the Lake of Garda: the trees were planted on the south side of walls running east and west, they were covered in winter with mats (*psiathoi*), etc. "Rich people," he adds, "who can afford the expense, plant them under colonnades, along walls that are exposed to the sun; water them well, let the heat of the sun have full effect, and cover them up when winter approaches." This was only hot-house cultivation. Palladius, who lived in the fourth or perhaps the fifth century A.D., speaks of lemon-trees in Sardinia and near Naples, that is, in warm districts, where the air was tempered by the sea, and where the ground was fertile and well-watered; there the trees grew winter and summer in the open air, and the hitherto merely traditional, semi-legendary conception of the tree could be corrected by actual sight. It was then found that it really brought forth blossom and fruit continually, as Theophrastus had asserted. Thus, in the course of the first Christian centuries, the evergreen tree which bore the golden apple was naturalized completely in Italy—first in pots, with doubtful success; then protected by walls on the north, and covered up in winter; and, finally, in the open air—proving by one more example that the Imperial epoch of rapid and irrevocable decay had, nevertheless, in some branches of human development that are less generally regarded, contributed to progressive development, and to the exchange and technical utilization of the natural products of the most various countries.

Now if it be asked, what kind of Aurantiaceæ are to be understood by the Median apple and the *arbor citri?* we may confidently reply, the real Citron, *citrus Mēdica cedra;* and this for many reasons. First of all, this immense thick-rinded fruit, with only slightly sour, and, in some varieties, rather sweet pulp or juice, is still called *cedro* in Italy. Secondly, the citron-tree is still found in the Persian province of Gilân, a part of ancient Media, bearing the characteristics mentioned by Theophrastus, *i.e.*, provided with many sharp thorns. Thirdly, accidental allusions in the ancients to the shape, consistency, and eatableness of the Median apple correspond only to the true citron: Dioscorides calls it *epimekes*,

oblong, and *errhytidomenon*, wrinkled; the fruit is boiled with wine or honey, it is edible and is not edible; it is so large that Apicius says each single fruit is put into a separate pot; *in vas citrium mitte, gypso suspende* (some think that a kind of pumpkin is meant); while yet unripe, it is surrounded with an earthenware cover, into which it grows and the shape of which it takes; the flesh, that is, the thick white rind, of which almost the whole fruit consists, is spoken of as the chief part—all features that exactly correspond to the *citrus Mēdica cedra.* And, lastly, all the other kinds of Hesperides' fruit have names that exclude any doubt as to their having been introduced much later. The *Lemon* —which the Germans wrongly call citrone—a smaller and rather roundish fruit, with a thin aromatic rind and abundance of sour juice, is so called after the Arabic *limûn*, which word is derived from the Persic, and the Persian word from the Indian, which sufficiently indicates its origin, the road it travelled, and the period. In the time of Charlemagne there grew on the shores of Lake Como—past which at that time a high-road led from Italy to Chur and the Valley of the Rhine—besides olives, pomegranates, laurels, and myrtles, also the Persian apple, called *citreon;* Paulus Diaconus said that it excelled them all in its perfume, and this quality, as well as its name, points it out as having been the thick-rinded *citrus Mēdica cedra.* Two hundred years later, about 1000 A.D., when the Prince of Salerno was besieged by Arabs, and relieved by forty Normans who were returning from the Holy Land, he sent ambassadors to Normandy with "*poma cedrina, amigdalas quoque, et deauratas nuces,*" to induce the Normans to come and help to defend such a beautiful and fertile country (*chronica Montis Cassiniensis;* in the Old French translation, by Amatus of Monte Cassino, the *poma cedrina* are called *citre*). At that time, then, only the *citron* of the ancients grew in South Italy. When Jacobus de Vitriaco—Bishop of Accon, afterwards of Tusculum, and a cardinal, who died at Rome 1240—described the wonderful productions of the Holy Land, the *lemon*-tree cannot yet have existed in Europe, for he expressly includes it among the Palestinian plants that were foreign to Europe. The same author found the paradise-apple tree—French *pamplemousse*, Italian *pomo di*

Paradiso or *d'Adamo*—under this last name in Palestine. The fruit of this tree is the same as that still used by the Jews of all countries at their Feast of Tabernacles, and in many parts of Italy it was cultivated solely for that purpose. So it was the Crusaders, or the traders to Italian ports, or the Arabs during their invasions, or in their colonies on the islands and coasts of the Mediterranean, that brought over the lemon, whose intense acidity was valued both in Europe and the East as a piquant addition to many dishes; which rendered foul water drinkable, and, when mixed with sugar, which just then made its appearance, formed the delicious *limonata*, or lemonade.—To the same Arab period Europe owes the Orange, *citrus aurantium amarum;* Italian *arancio, melarancio;* French *orange.* Originally this tree, with its glowing red-golden and bitterly aromatic fruit, and its wonderfully fragrant blossoms, had migrated to Persia from its native home, India (Persic *nârenǧ*); thence to the Arabs (Arabic *nârañǧ*); then farther to Europe (Byzantine *nerantzion*). In the little essay by Silvestre de Sacy, on the history of the *Aurantiaceæ* among the Arabs, there is the following important historic testimony of Masoudi as quoted by Makrizi: *Makrizi dit,* "*Masoudi rapporte dans son histoire, que le citron rond* (the orange) *a été apporté de l'Inde postérieurement à l'an* 300 *de l'hégire* (August, 912 A.D.); *qu'il fut d'abord semé dans l'Oman. De là, ajoute-t-il, il fut porté à Basra en Irak et en Syrie, et il devint très commun dans les maisons des habitants de Tarse et autres villes frontières de la Syrie, à Antioche, sur les côtes de Syrie, dans la Palestine et en Egypte. On ne le connaissait point auparavant. Mais il perdit beaucoup de l'odeur suave et de la belle couleur qu'il avait dans l'Inde, parcequ'il n'avait plus ni le même climat, ni la même terre, ni tout ce qui est particulier à ce pays.*" During its further migration to Europe it must of course have lost still more of its sweet perfume and beautiful colour, which the Arabs already missed in it in Western Asia. In some Italian dialects, and in Spanish, the initial *n* of the Arabic word is still preserved; the idea of *or, aurum,* gave to the French word *orange* its somewhat deviating form; in *orange* already lies the *gold-orange* of Goethe. Jacobus has the word already in a French form, *orenges.* Albertus Magnus, in his book

"De Vegetabilibus," written shortly before 1256, not long after the time of Jacobus, blames those who use the name *arangus* for the *cedrus* (the citron-tree of the ancients). According to Amari's "Storia dei Musulmani di Sicilia," the *via de Arangeriis* in the neighbourhood of Patti, mentioned in a diploma of 1094, was an avenue of orange-trees: so the name and the fruit must have been already introduced into Sicily by the Arabs before the Crusades.

The *sweet* orange, *citrus aurantium dulce*, is still younger in Europe. Here, too, its history and course of migration is shown by the German name *apfelsina*, *i.e.*, apple of China, and by the Italian *portugallo*. It was the Portuguese who, when their commerce had extended to the seas of Eastern Asia, brought the sweet orange from Southern China to Europe, it is said in the year 1548, and the first European specimen stood long after in the house of Count de St. Laurent, at Lisbon. The Jesuit Le Comte, who had lived a long time in China, alludes to this in his "Nouveaux mémoires sur l'état présent de la Chine," Paris, 1679: "*On les nomme en France orange de la Chine, parceque celles que nous vîmes pour la première fois en avaient été apportées. Le premier et unique oranger, duquel on dit qu'elles sont toutes venues, se conserve encore à Lisbonne dans la maison du Comte S. Laurent, et c'est aux Portugais que nous sommes redevables d'un si excellent fruit.*" Ferrari (Hesperides, Romæ, 1646) still calls the orange *Aurantium Olysiponense*, orange of Lisbon, and adds that it was sent from thence to Rome *ad Pios et Barberinos hortos*. The last words are a compliment to Pope Urban VIII., Barberini, in whose pontificate Ferrari wrote his book; the gardens of the Pii could only be those of popes Pius IV. and Pius V., who occupied the papal chair from 1555 to 1572. The deliciousness of the fruit soon procured for the tree a wide propagation around the coasts of the Mediterranean and deep into Western Asia, and not only do the Italians say *portugallo*, but the modern Greeks say *portoghalea*, the Albanians *protokale*, and even the Kurds *portoghal;* while in the north the Russians, though neighbours of the Chinese, have adopted the German name *appelsin* — all signs of a complete revolution in the world's traffic, which no longer passed through Asia from East to West, as in the time of Hellenism and

the Roman emperors, and afterwards of the Islamite Arabs, but from the time of Vasco de Gama had taken the opposite direction, and made the ocean its highway. Portuguese and Spaniards introduced the tree into America, where it throve wonderfully in the tropical regions of that new world. Another and late variety, the so-called Mandarines (*Citrus madurensis*), smaller, sweeter, and more aromatic than the orange, appeared in the nineteenth century, and occupies more ground every year. It is said to have come to Sicily from Malta.—Altogether, the orange group is very susceptible of change; situation, grafting, and mode of treatment have already produced innumerable varieties. It was once the gardener's pride to produce such varieties at the time when, from the Tuileries and afterwards from Versailles, together with the opera, gilding, and porcelain, large orangeries of round trees in splendid tubs and vases, forming long avenues, were a costly but indispensable part of every court or nobleman's house. Later on, with rising culture, these orangeries changed into more botanical conservatories, and, as æsthetic Humanism progressed, young enthusiasts began to turn their backs on the court gardens, with their spirals and voluted cornices, and rush to the land of blue skies, golden fruit, and pure Doric architecture. But they had to travel far before they trod a Hesperian grove, and even there the poetic tree and fruit were subjected to the aims of production and profit; the blossoms were ruthlessly shaken down to make Cologne water of; the lemons were squeezed and the flowing juice poured into wooden tubs; the ripe fruit was sugared by confectioners for the markets of the world, and from the rinds distillers manufactured Bergamot oil.—When Pæstum built its famous temples, when the Tauromenians sat in their theatre, when Pindar, Æschylus, and Plato were the guests of the kings of Syracuse, there was not a blossoming lemon-tree to be seen far and wide; nay, those ancient heroes, poets, and sages had never so much as heard of one. The villas in which the Humanists of the fifteenth century and the members of the Platonic Academy strolled were the first to be adorned with orange trees, and *sweet* oranges were first plucked from the evergreen boughs by the Jesuit fathers, and handed to smiling dames in hoops and powder, for the refreshment of their beautiful rouged and thirsty lips (note 79).

THE CAROB-TREE.

(CERATONIA SILIQUA.)

THE Carob-tree is an evergreen, not very tall, but wide-spreading and shady; it loves best to grasp with its roots the hot, sun-warmed precipices in the neighbourhood of the sea, that shelter it from cold north winds. It grows slowly, does not bear fruit till after its twentieth year, and lives for centuries. Its fruit—flat brown pods an inch broad, six or even twelve inches long, curved like a horn or sickle, and filled with dark, glossy, bean-like seeds and sweet nourishing pulp—are eaten by men and animals, and form a considerable article of trade. Until these pods are quite ripe and brown, they are considered unwholesome or even poisonous, but afterwards they are eaten by swine, horses, and asses, and even the swineherd and donkey-driver will not despise them when baked or roasted. If the tree be intended not merely to afford shade, but also to bear a rich crop of fruit, it is necessary to prune it from time to time, like the olive and the vine. Its northern limit is about that of the lemons and oranges. The carob is widely diffused in the East, and no market till far into Russia is without this cheap dainty; it is largely found in North Italy, costs little, and is a special favourite with boys. The tree did not grow in ancient Greece, but the sweet pods were brought to the Greek markets from the East; they were incorrectly called Egyptian figs, for Theophrastus expressly declares that "the *keronion* did not grow in Egypt at all, but in Syria and Ionia, and about Cnidos and Rhodes." It was therefore a plant of Syria and Ionia, which had spread as far as Cnidos in the south-west of Asia Minor, and to Rhodes. Theophrastus describes the tree correctly enough,

but he does *describe* it, and that minutely, proving that his readers were unacquainted with the tree and had no opportunity of observing it. Strabo also knew nothing of the tree in Egypt, but is aware of its existence in Ethiopia, or the country where Meroë was situated. Theophrastus pointed out the evil effect of the blossoms, and he might have added of the unripe pods. Galen extends the hurtful quality even to the ripe fruit, and thinks it would have been better if the tree had never been brought to Europe from the East. The true fatherland of the tree was fertile Canaan; and as it must be grafted before it will produce edible fruit, it was, like the olive and date-palm, a product of human and especially of Semitic art and industry. Anciently, as now, the sweet carob-pods were a common article of food in Palestine. John the Baptist in the wilderness had eked out his life with them, and modern travellers have been shown the very tree that furnished the forerunner of the Messiah with "St. John's bread." In the parable (Luke xv.) the Prodigal Son, who had sunk so low as to herd swine, would fain have filled his belly with the *keratia* hornlets, *i.e.*, carob-pods) "that the swine did eat, and no man gave unto him." *Carat*, the name of the small weight for gold and diamonds, which is taken from the *beans* of the keratia (called by Isidore *cerates*, adopted later by the Arabs, and communicated by them to other languages, also called *siliqua*) shows how widely spread and how common the fruit must have been in the Greek Orient. In the Roman authors we find a few passages that hint at attempts made even then to plant the Carob in the West. According to Columella the swine in the forests fed on *Græcæ siliquæ*, besides other wild fruits. But as it is impossible that carob-trees grew wild in Europe in Columella's time, the statement may have been copied from some Greek-Oriental writer on agriculture. In another passage Columella advises that the tree should be sown in autumn, probably another adopted foreign maxim; Pliny repeats it, but he calls the fruit *prædulces siliquæ* or *siliquæ Syriacæ*, and does not treat it as a native production. A generation earlier, Scribonius Largus also called the pods *Syriacæ*. Where *siliquæ* are elsewhere mentioned as forming the food of the poor and contented, there is no reason to suppose that anything

was meant but beans or peas. Towards the end of the second century Galen, as we have seen, only mentions the carob fruit as an import from the East. But in the last days of the Roman Empire, Palladius gives full instructions about propagating the tree, and speaks of his own experience in it. There is some doubt whether the passage be not a later insertion; but even if the naturalization of the tree began in Roman times, the Arabic names—Italian *carrobo*, *carruba*, Spanish *garrobo*, *algarrobo*, Portuguese *alfarroba*, French *caroube*, *carouge*—teach us that it was the Arabs who either revived the culture when extinct, or, if they found it still existing, gave it its present extension. In the southern half of the Italian peninsula, carob-trees are now more common, and the harvest richer, than those travellers would suppose who follow the common route, and perhaps have only seen the Syrian tree on the rocky highway near Amalfi. Sicily, that Arabic island, produces and ships a great quantity of carob-fruit; the *Ceratoniæ* are also not wanting in Sardinia, where they are often planted singly in the fields to afford shelter for the midday siesta; but the finest trees of the kind grow on Apulian Gargano, that seldom-visited, grand, isolated limestone promontory, so remarkable both from a picturesque and from a scientific (including botanical) point of view. In modern Greece, carob-trees are found scattered here and there on the mainland and in the islands, some being of venerable age, like that under which Fiedler stopped to dine on the Skironian road, and whose trunk measured several feet in diameter. In Asia Minor, Syria, etc., the tree is an object of religious veneration, to the Mussulman as well as the Christian. It is dedicated to St. George, and it is not uncommon to find chapels built among its boughs. As in all cultivated plants, varieties have been introduced in the carob-tree, which differ in the comparative sweetness and capacity of keeping, as well as the shape and size of their pods. In the East, where the fruit possibly developed more sugar—and sometimes also in Europe—they squeeze out of the pods a kind of honey to boil other fruits in, the refuse being thrown to the pigs. The hard wood is also prized, and the bark is used for tanning.

THE RABBIT.

(LEPUS CUNICULUS.)

THE Romans acquired from Spain their knowledge of a domestic animal resembling the hare, which the Greeks in the east of the Mediterranean had never seen; this animal was the Rabbit. Like *Stipa tenacissima* and the cork-oak, it was peculiar to Spain, and closely connected with the Iberian race, with whom it seems to have come to Western Europe by way of Africa. The Romans called it *cuniculus*, a word possibly rooted in the Iberian language, and only provided with a Latin ending (note 80). As far back as Cicero and Cæsar, the same word also meant subterranean passages, and it was a matter of dispute whether these were called after the animal, or the animal after them. The ancients generally adopted the latter opinion, for no other reason than that they more often met with the thing and word in that sense than with the little-known animal; while we think the first opinion more natural, though the Roman sappers and miners may not exactly have learnt their art from the rabbit, as Martial supposes:

"Monstravit *tacitas* hostibus ille *vias*."

In literature we find the rabbit first mentioned by Polybius, about the middle of the second century B.C., in the form *kyniklos* taken from the Latin, which Athenæus spells *kouniklos*. The word is also found in Posidonius of Apamea, an historian and philosopher of the beginning of the first century B.C. Catullus knows Spain as a country rich in rabbits or rabbit-holes—*Tu cuniculosæ Celtiberiæ fili Egnati*. Varro, Strabo, and Pliny discourse more at length on the animal, its adoption and propagation, and the method of catching it. The Iberians must have been specially devoted to

breeding rabbits and eating their flesh; they had brought the animal with them across the sea to the Spanish-Italian islands, not only to Corsica, where Polybius found them, but also to the Baleares. They regarded as the greatest dainties the unborn fœtus, or the new-born suckling, which were devoured intestines and all; these unborn or new-born rabbits were called *laurices*, probably another Iberian word. But the excessive fecundity of the hare species—a rabbit will produce from four to twelve young ones six or seven times a year, and begins the business a few months after birth—soon rendered the animal a plague both on the Spanish continent and in the islands; it mined the cultivated land with its burrows, it gnawed the roots and young shoots, it undermined trees and even human dwellings. Strabo tells us that the inhabitants of the Gymnesiæ (Majorca and Minorca) once sent an embassy to the Romans, begging that they would assign them another land to dwell in, as they could no longer hold their own against the multitude of rabbits. Pliny reports it as certain that they petitioned the Emperor Augustus for military help, as they could not manage the animals alone. And this trouble was not only felt throughout Spain, but extended to Massilia—perhaps another sign of the ethnographical position of the Ligurians, who, before the arrival of the Celts from the north, had occupied the whole coast on which Marseilles is situated. Meanwhile the Iberians recognised in another half-wild and half-domesticated animal, which they had procured from Africa, a sturdy enemy of the rabbit, and a very zealous companion in the chase. This was the Ferret, a kind of fitchet or foulmart—Latin *viverra*, Span. *huron*, Ital. *furetto*, French *furet*. It crept into the rabbit-hole, and drove the inhabitants out at its mouth, where the hunter intercepted and killed them. The Greeks called this ferret by the general name for all of the weasel kind, *galê*, to which they added for distinction the adjective *Tartessia*. Herodotus is already cognisant of such Tartessian, *i.e.*, Spanish weasels; in describing the north coast of Africa, he says that there, under the Silphium-bushes, lived *galeai* exactly similar to the Tartessian, which last were therefore used in Spain for hunting 500 years before Christ. We learn from Varro that rabbits were kept by the Romans in so-called

leporaria (warrens) at the time of the Republic; one of the speakers at Athenæus's Banquet, during a voyage from Dicæarchia (now Pozzuoli) to Naples, had found the small island at the extreme point of land (Nisida) inhabited by few men and many rabbits—which is even now true of the Italian islands in comparison with the mainland. But the animal was always considered by the Romans the characteristic sign of Spain; we see this, for example, in the gold and silver coins of the Emperor Hadrian, where, on the reverse with the legend Hispania, there is seen a rabbit in front of a reclining female figure holding a branch of olive and resting its left arm on the rock Calpe.

Now-a-days the pretty, and so peculiar, little animal is spread over a great part of Europe, and is a favourite and common article of food, especially in France and Belgium, under the name of *lapin.* This must have already been the case at the period described by Gregory of Tours, for he reports of Roccolenus, that he frequently ate *laurices* at Quadragesima. Petrus Crescentius, a contemporary of Dante, says that rabbits lived in a continuous tract extending from Spain through Provence to Lombardy—therefore always on primitive Iberian ground. It is now well known, not only to the people of Provence, but to the Parisians; it has not only overrun the islands of the Western Mediterranean, but the Greek islands. In France, England, and the Netherlands it has been considerably changed and improved by domestication and cross-breeding, not only in delicacy of flesh, size, fecundity, and endurance of a cold climate, but also as regards the silky softness of its fur (note 81).

THE CAT.

THE dog is a very ancient companion of man; certainly the earliest of all animals that man associated with himself. Who, that did not know the fact, would believe that that comical enemy of the dog, the Cat, now hardly absent from any house inhabited by civilized or uncivilized people, is quite a modern acquisition? We must except the inhabitants of the Nile Valley. The reports of ancient writers, and the monuments and remains of ancient Egypt, equally prove that the Egyptians, that mysterious people, alike attractive and repulsive, whose doings go back into the night of Time, reared multitudes of cats, held them sacred, and embalmed them after death. Diodorus relates an occurrence of which he was an eye-witness, and which, he adds, proves the deep religious reverence that the Egyptians entertained for the animal. It was the time when the supremacy of Rome was greatly feared, and everything was done to please such Romans as were then in Egypt, and to avoid all quarrels with them. It happened that a Roman involuntarily killed a cat; the populace rose in anger, and attacked the house in which the deed had been perpetrated; no efforts of King Ptolemy and his officers, no dread of Rome and the Romans, could save the criminal's life. The species of cat tamed by the Egyptians was the *felis maniculata.* The mute reserve and therefore mysteriousness which Hegel says is common to all animals, is especially observable in the cat and its peculiar secret ways. It has still, for those who leave it to its own devices and attentively observe it, something Egyptian, which inspires some people with fondness and others with dislike. To tame this animal so completely and accustom it to mankind—for the domestic cat never runs wild again, and always returns to the house—was only possible

to the Egyptians, and was the work of centuries. Only after many, very many generations of cats had been treated in the same kind, careful, and tender manner, so that during the long period every experience of pain or hurt had been extinguished from the memory of that shy creature, was it possible that our present snuggling house-cat could be produced out of the wild animal, which seems the least adapted of all for the process of taming. Here, as in so many cases, religious superstition worked wonders, and for once was serviceable, instead of detrimental, to culture. F. Lenormant asserts that the cat has been represented in Egyptian works since the 12th dynasty: if this be correct, the merit of the first taming would belong to the inhabitants of the Upper Nile countries, and Egypt could have only continued the work there commenced. It is fortunate that the diffusion of the Egyptian cat to other countries took place at the time of the Roman Empire, before Christian asceticism had reached its lowest depth, and before the Islamite invasion; else this domestic animal might have disappeared with the destruction of all ancient Egypt and its religious ideas and customs, and the loss would perhaps never again have been made good. Indeed, many an animal which once served mankind has suffered such a fate; above all, the African elephant, which carried Hannibal's soldiers, crossed the Alps through snow and ice, and is now only found in the wildernesses of the interior of Africa, where it is being slowly exterminated by reckless and cruel hunters.

The Greeks and Romans not seldom suffered from the plague of an abnormal multiplication of mice, and now and then we hear of some miraculous deliverance of a district from the mice which overran it, or of a wholesale emigration in consequence of the impossibility of protection from those rodents.

The pre-European language already knew the *Mouse* as a domestic thief, for its name, which is found alike in Greece and Italy, on the Elbe as on the Indus, is known to be derived from a verb which means *to steal.* As enemies of the mouse—and it has many—all the animals that stealthily prowled round the houses of men—the weasel and its sub-varieties (note 82), the foulmart, marten, and wild cat, must have been very early noticed; some of

these animals were on that account cherished and taken into a kind of partnership with man; weasels and martens can be tamed, and before the introduction of the cat they were tamed much more frequently than now. On the other hand, poultry, and especially their young, suffered at the hand of these robbers, so that their increase was checked again. In Greek these animals were called *galeē*, *ktis*, *iktis*, *ailouros;* in Latin *mustela*, *felis*, *melis*. The animals were not strictly distinguished, and their names also fluctuate both in popular language and in literature. But there is no passage containing one of these names, which we are obliged to interpret of the tame domestic cat. The weasel in particular, *galeē*, is named, together with the mouse, as its superior enemy and great object of fear, just as we associate the cat and mouse in fables, games, and figures of speech.

"Two beings," says the Mouse to the Frog, in the beginning of the Batrachomyomachia, "I fear above all things on earth, the Hawk (*kirkos*), and the Weasel (*galeē*), which have done my species much harm; yes, and that painful, fatal, deceitful Trap; but most of all the Weasel, which is the strongest, and even comes creeping after me into my holes." In "The Wasps" of Aristophanes one replies to another who asks for a domestic story, "Oh, anything to oblige; well then: Once upon a time there was a mouse and a weasel"—just as we say to children, "There was once a cat and a mouse." In one of Plautus's plays a weasel has caught a mouse at the very feet of a speaker. The Egyptian domestic cat is called by the Greek describers *ailouros;* when the word, which is not often met with, refers to a Greek animal, there is nothing to prevent our supposing it to mean the marten or the wild cat. In a passage by Callimachus, who wrote it at Alexandria, we might naturally think the Egyptian cat was meant: a man in dog-hunger devours the cow, the horse, and the *ailouros*, "the terror of small beasts." But the description is even more characteristic of the house-marten than of the equally rapacious, but softer and more gentle, domestic cat, for which the poet would surely have found a more appropriate epithet. The same thing applies to a verse in the fifteenth idyll of Theocritus, the scene being also laid in Alexandria. Here the impatient mistress scolds a lazy maid in the words, "What, again

these weasels wanting to sleep soft?" The poet might indeed have been thinking of Egyptian house-cats, but tame martens and weasels would not have disdained a soft bed either. In a fragment by the Comic poet Anaxandrides, the speaker sneers at an Egyptian on account of the Egyptian customs, which he, imitating Herodotus, describes as diametrically opposed to the Greek: "If you see a cat in pain, you weep; I should like best to kill it and skin it"—where the Greek may have had in his mind the *Greek* (wild) animal, which answered to the cat in Egypt. The Latin *mustela* is exactly our weasel; but even *felis* is nowhere the tame cat, but either the foulmart and marten, or the wild cat. The agricultural authors Varro and Columella give instructions for contriving duck-houses and hare-parks, so that no *feles* or *meles* may enter; they cannot possibly have meant domestic cats. The manner in which Horace relates the well-known fable of the Town and Country Mouse, at once shows that in his time no cats were yet kept in the houses of the capital: "A city mouse paid a visit to the field mouse, and was entertained by him to the best of his ability with peas, oats, wild berries, and pieces of bacon. But the spoilt guest despised the common fare, and said, 'What's the good of living all alone here in the fields and woods, far from men? Come with me to the city, there you will find better food.' They set off; it was late at night, they crept through a hole in the wall and into the urban house. There stood the dishes and baskets left from the banquet over-night; they feasted well and slept on a crimson carpet. Suddenly"—they see the cat come creeping? and have barely time to save themselves?—no such thing—"the doors opened noisily, a loud barking shook the house, the two mice ran hither and thither and were almost frightened to death. Then the field mouse said, 'Thank you, I would rather not have your luxurious life; my hole in the earth, where I lie safe and undisturbed, pleases me better, though there be nothing to gnaw but peas.'" In such a fable, instead of the servants coming in early in the morning to clean the banqueting-hall, a modern story-teller would certainly have given the cat her part, and would have said nothing about barking dogs. Pliny seems to have some acquaintance with the peculiarities of the cat, *felis*, but even he does not

describe it as the tame companion of man; and what he does say would equally fit the European wild cat. A Pompeian mosaic, now in the National Museum at Naples, represents "a cat mangling a quail;" but the striped lynx-like fur, as well as the expression of the head, are far more like those of the wild cat, although a similar form may now and then be found among our present domestic cats. In the excavations at Pompeii no remains of a cat have ever turned up. Horses, dogs, goats, and other domestic animals were buried, and their remains have been discovered, but "very remarkably all the cats had disappeared in time." The wonder ceases, if at that time there were no cats in the town. The little animals seen on early coins of Tarentum and Rhegium, which some have taken for cats, are so small and indistinct, that they might be explained in any other way—as any one will allow who has ever had such a coin in his hand.

If we search the literature of Fable, it unfortunately gives us no sure chronological data. In the popular ancient fables of Æsop, as far as they are preserved in fragments and hints by authors of the classic period, the cat is nowhere found. In two fables of Babrios, whose date is doubtful, the *ailouros* appears, but each time it is distinctly the marten trying to entrap fowls; in one he hangs on a peg in the shape of a pouch (of marten-skin), but the cock knows him by the teeth remaining on; in the other the hen is sick, and the *ailouros* creeps up to her to sympathize, upon which the hen says, "You be off! that is the best way to keep me from dying." Babrios also looks upon the weasel as the enemy of the mouse: in fable 32 the weasel is transformed into a beautiful woman, and betrays itself during the wedding by pursuing a mouse; and in fable 31, the weasels and the mice go to war. In the fables of Phædrus the same thing is seen. In fables 4 and 6, the mice and the weasels go to war, and a weasel caught by a man cries out, "Spare me, for I clear your house of troublesome mice." But in Palladius, when the days of the Western Empire were already numbered, we recognise our tame cat under a name used for this new domestic animal alone, *catus*, which, like the Egyptian animal itself, has since spread from Italy to all peoples, not only those of Europe, Basques, Finns, Albanians, and modern Greeks, but also

in the far East to Asiatics of the most different race (note 83). After Palladius we find the word again in the ecclesiastical historian Evagrius Scholasticus, who wrote in Greek: "*ailouros*, commonly called *katta*." He lived at Epiphania in Coelesyria, and wrote till the year 594; so the expression *katta* was already a common one in Western Asia towards the year 600. About the same time Isidore in the extreme West says in Latin: "him (the mouser) the vulgar call *catus* because he catches." The word is also found elsewhere in those times, and becomes more frequent with every generation. It was a popular appellation formed in Italy, meaning really the *little animal*, the *young*, just as *auca* (little bird) was said for goose, *la pecora* for sheep, etc. At least this is the most probable derivation.

Was there any particular circumstance just then, that caused an Egyptian animal, which the Greeks and Romans had never thought of before, to become more frequent in houses than formerly? History is silent; but the following conjecture presses itself upon us. At the time of the Migration of Nations, the dwellings, granaries, and cellars of the European world were overrun by a hitherto unknown voracious rodent coming from Asia, the Rat, *mus rattus*. Tradition does not tell us the moment of its appearance nor the direction it took, but the name rat is already to be found in early Old High German glossaries, as well as in the Anglo-Saxon one of Ælfric in England; it is therefore considerably older than Albertus Magnus, in whose writings the animal was first described by natural historians. Did the rat come into Europe in the wake of the immigrant nations? Was it disturbed in the heart of Asia by the setting-out of Turkish nations, say, the Huns? When it reached the east of Europe, the Slavs must have been already divided into sections, for they call it by different names; the Pole uses *szczur*, the Russian *krysa*, and the Danubian Slavs another word again. The German name *ratte*, *ratz*, Old High German *rato*, has no doubt lost an *h* and is identical with the Old Slavic *krŭtŭ*, Russ. *krot*, the mole, Lith. *kertus*, the shrew-mouse. In Old Irish the rat was called *Frankish mouse*; it had therefore reached Ireland from the land of the Franks. Europe has experienced a second and still more terrible

invasion of the kind since the first thirty years of the eighteenth century; then the great travelling rat, *mus decumanus*, appeared on the Lower Volga, overran in curious starts and pauses one town and district after another, spread itself by means of river-boats and ocean-ships—for it delights in voyages—with the magazines of the Austrian and Russian armies, and during the revolutionary wars all over Germany and the west of Europe; and has long since not only taken possession of Paris and London (perhaps by ship direct from the East Indies), but has followed commerce across the Atlantic to the New World, everywhere exterminating its weaker predecessor, the house rat of the Middle Ages. In a similar manner must the pretty little nibbling house mouse have come to us from Southern Asia—was its arrival contemporaneous, say, with the immigration of the Indo-Europeans? Other animals that were unknown to antiquity seem to have made their appearance among the civilized nations of the West at the time of the Teutonic Migration, or with the introduction of culture and roads into the dark East of Europe; for example, the Badger and the Hamster. The German name of the first, *dachs*, has spread all over the Romance countries, to which the animal seems to have been a stranger before; the German name of the second, unknown in Italy, taken over bodily by the French, *le hamster*, and copied by the Germans from a Slavic word, argues an inhabitant of the earth that came from the East, and for which a path was prepared by the agriculture that thinned the woods (note 84).

The cat reached the Germans at a time when the myth-producing power, though enfeebled, was not wholly extinct (note 85). The cat became the favourite animal of Freya, the Goddess of Love, perhaps supplanting the weasel. Grimm says: "Freya's car was drawn by two cats. The cat and weasel were considered wise animals, skilled in magic, whom men had good reason for humouring." In the later Middle Ages, witches change into cats: to which superstition the creature's stealthy night-walking ways, her dark fur, and her eyes gleaming ghost-like in the gloom, might give occasion, even without any reminiscences of heathenism. One story may serve for all others of the kind. "On the last day of April a miller's boy was busy in the mill very late in the even-

ing, when a black cat entered; the boy gave it a blow on its fore-foot, so that it ran away howling. The next day, when the youth went to the miller's house, he noticed that his wife lay in bed with a crushed arm, and learned that it had been hurt the evening before, no one knew how. So he guessed that the miller's wife was a witch, and that she must have been to the Blocksberg in the shape of a cat on the evening in question." That noble ladies and princesses of the eleventh century already held favourite cats in their lap, and fed them with dainties, is shown by the example of the wife of Emperor Constantine Monomachus. Even now the animal is a greater favourite with the Easterns, and in the south and east of Europe, than with nations of German origin. In Russia there is not a shop on the threshold of which a well-nourished cat does not lie blinking half in sleep. In France the cat is the friend of the household, and in Italy there is a universal partiality for this fine, clean, and graceful creature. "In many a church from Venice to Rome," says Fridolin Hoffmann, "I saw a well-fed sacristy cat sitting on the balustrades of side-altars, or even on the communion bench; the service did not disturb the creature's equanimity. It quietly walked along the front of the pews amid the pealing of the organ, and the people were polite enough to lift up their prayer-books to let it pass unhindered. Being thus privileged, it is no wonder that even in very decent restaurants you suddenly find two or three cats sitting near you on the cushioned seat or the next chair, comfortably purring or magnetically rubbing their sides with their noses." An example of the peculiar manner in which individuals are sometimes attracted by this animal is afforded by a day-labourer at Berne, one Gottfried Mind, the Raphael of Cats. Both as a boy and as a man he was indifferent to everything, and almost idiotic, but he observed the life and manners of the cat with intelligence and love, and depicted them in a masterly manner in water-colours (he died in 1814).

THE BUFFALO.

It was also in consequence of the Migration of Nations that the *Bos* family—that first friend of man when emerging out of barbarism—was enriched by the addition of a kinsman from the South, endowed with tremendous pulling power, the black and scowling *Buffalo.* He now lives in the moist, hot malaria plains of Italy, enjoying their slime, and defying their venomous vapours; the maremmas of Tuscany, the bottom-lands about the Tiber's mouth, the Pontine marshes, the swamps of Pæstum, the Basilicata; also in the *landes* of Gascony, in many parts of Hungary, etc. The Pontine buffaloes wallow like immense swine in the high reeds of the swamps, standing still at the sound of a carriage on the high road, and stupidly staring at the traveller; or, when teased by gad-flies, hiding up to the muzzle in the water. The buffalo is employed, like the ox, in dragging the heavy plough, or the loaded harvest waggon; its milk is made into highly valued cheese (called in Naples *muzzarello*), and, after death, its thick, heavy skin forms the strongest leather. Niebuhr found the animal widely diffused in the East. In his description of Arabia, 1772, he writes: "In the East buffaloes are found in almost every marshy district and near large rivers in greater numbers than common cattle. The buffalo-cow gives more milk, and the buffalo-ox is quite as well adapted for labour as the common ox. I have seen buffaloes in Egypt, on the Isle of Bombay, near Surat, on the Euphrates, Tigris, and Orontes, at Scanderoon, and elsewhere. I do not remember to have seen any in Arabia, and indeed there is not sufficient water for the animal in that country. The flesh of the buffalo does not seem to me so good as other beef; it is coarse and hard." While progressive culture has almost exterminated those savage, obstinate, and kingly inhabi-

tants of the European forests, the ure-ox and the bison, the buffalo was brought by immigrating nations from the borders of India to the southern coasts of Italy. Aristotle describes a wild ox living in Arachosia, near modern Kabool, which can be no other than our present buffalo. During the succeeding centuries that animal must have migrated farther west. It was first seen in Italy about the year 600 A.D., in the reign of the Longobardian king, Agilulf—Paul. Diac. 4, 11: "Then for the first time wild horses and buffaloes were brought to Italy, and regarded as wonders by the Italian people" (note 86). We must be grateful to the Longobardian monk for this report, for how seldom do the historians, who have enough to do with questions of war and government, throw us a crumb of what relates to culture; but we should have liked something still more exact. Were these *bubali*, we ask, the *uri* and *bisontes* of the European forests? That can hardly be, for those animals must have been often seen in Italy, and therefore would not have excited the astonishment of the Romans or Longobardians. But if the *bubali* were real buffaloes, whence and along what route had those inhabitants of a warmer region reached cold and distant Europe? They could not have been brought by sea. It seems probable, as they appear in company with wild horses, that they were a present to the Longobardian kings from the Khan of the Avars, for this Turkish race of nomads, who at that time dwelt near the Danube and scourged the Roman Empire with fearful devastations, were on friendly terms with the Longobardian Court. If King Agilulf sent shipbuilders to the Avarian Khan to supply the vessels necessary for taking an island in Thrace, that Khan may well have sent products from the heart of Asia in return. So the black, naked, heavy-footed buffaloes, which are kept in order in such a characteristically Asiatic manner by men on horseback, armed with long spears, are living witnesses of the terrible times when the immeasurable mass of land in the East, with which the peninsula we call Europe lies conterminous, without any means of defence but distance, kept disgorging savage hordes, bent, wherever it was possible, on tearing up by the roots all that was human, the acquisitions of long-continued and ennobling culture.

That the wholly or partially Nomadic races, which by turns encamped in and drove each other out of beautiful, fruitful, and once highly-cultivated Pannonia, should bring new races of cattle with them, and perhaps better ones than those inherited by antiquity from the primitive world, lay in the nature of things; and also that such cattle should find their way into Italy, and there maintain their breed when the wave of invaders that introduced them had long passed away. The three races of the South Russian steppes, a classic cattle region, are the deposit left by as many Nomadic invasions. The so-called Ukraine, or Podolian, or Hungarian ox, large and greyish-white, long-legged and long-horned, fat and fleshy, the draught-animal of the waggons and vans that traverse the steppe for hundreds of versts, is akin to the large whitish oxen, with long horns wide apart, that are found in Italy south of the Po, and have also passed over into Spain and Algiers. As Varro already remarked that white oxen were rare in Italy, but the rule in Thrace, these may have been the Scythian cattle brought by the Iranian pastoral tribes, and afterwards introduced into Italy by Goths or Longobards. And the Eubœan breed, which was also white ("whence our poets say, white-cowed Eubœa"—Ælian), would probably have the same origin; for Eubœa was very early connected with Thrace and the North. The Scythian cattle, however, are said by Herodotus to be *kolon*, stumpy-horned, and by Hippocrates *kereos ater*, hornless, therefore resembling the small German cattle which, Tacitus says, "lacked the glory of the brow." Perhaps the second South Russian species, smaller and red, the true steppe-cattle, are descendants of that Old Scythian breed; while the third species, the so-called Kalmuck cattle, came to the West, as the name indicates, only with the Tartar, or even the Mongol hordes. In Italy, Varro mentions the *Gallic* breed (had it come in with the Gauls?) as peculiarly adapted to field-work; while Pliny says the small, insignificant-looking Alpine cattle gave the most milk; and Columella says the same thing of the Altinian cows in Venetia. At the time of Theodoric the Ostrogoth, the Tyrolese cattle were small, but powerful; for when the Alemanni, shattered by Chlodwig, king of the Franks, seek shelter on Gothic

ground, and are some of them to be settled in Italy, their cattle are knocked up by the long and hurried march, and can go no farther; the king then orders the provincials of Noricum to barter their own small animals for the large Alemannian cattle; which proves an accommodation to both parties: "Ut illi acquirant viribus robustos, vos forma conspicuos." The big Alemannian breed may have come from the Gallic-Roman settlers within the *limes*, whose towns and farms had been first sacked and afterwards occupied by the Alemanni. The hornless cattle have now entirely disappeared in Germany under the influence of culture, but are still to be met with in Scandinavia, whence, during the Middle Ages, they spread to the White Sea. The oldest European cattle may still have existed during the Roman age in the *Ligurian* species, which was considered weak and miserable, and the remains of which are perhaps revealed to us in the bones found under lake-habitations. About the different races of cattle, their distribution and arrival in Europe, there is much left to explore, and perhaps to discover. There is no doubt that our tame Ox is descended from the Ure ox of primitive times, but its domestication was scarcely accomplished in Europe.

THE HOP.

(HUMULUS LUPULUS.)

In the year 1766 the great Linnæus asserted that the hop migrated into Europe from distant Russia *at the time of the Migration of Nations.* The fact that the hop now grows wild on hedges and in woods would in no wise invalidate that assertion, for a plant so widely-cultivated, supposing that the soil and climate were favourable, would easily run wild and find its way into places where it had never been planted by the hand of man. But we are certain of three things only: first, that the ancients had never heard of such a plant, the flowers of which are an agreeable addition to beer; secondly, that accounts of the earliest Middle Ages, which often mention beer and the products of southern gardens, never say a word about hops, which afterwards became so indispensable; and, thirdly, that in many European countries, like England and Sweden, the use of hops for making beer is first heard of towards the end of the Middle Ages, or even in the course of the sixteenth century, and then gradually becomes more common.

In the Lex Salica and the decrees of Charlemagne we search in vain for a hint of this plant and its cultivation; neither is it mentioned towards the middle of the ninth century by Walafredus Strabo, a North German, in his "Hortulus." But about that time we find traces of the hop in other regions. In a deed of gift of King Pipin the father of Charlemagne to the Abbey of St. Denys, dated the seventeenth year of his reign, the king bestows on that monastery *Humlonarias cum integritate*, in which we may find a resemblance to *humlo*, Mid. Latin for hop; but here it occurs

amongst other proper names, as that of a place or estate, and the similarity of sound may be purely accidental. But the polyptych of Irmino, Abbot of St. Germain-des-Prés, composed in the first years of the ninth century, before the death of Charlemagne, often mentions the payment of hop-dues, the plant being called *humolo*, *humelo*, *umlo*, and twice *fumlo*. Only a few years later, a statute of the Abbot Adalhardus of Corvey, in 822, absolves the millers from all work connected with malt and *hops*, and from the obligation to furnish the latter material. In the monastic documents of Freisingen, of the time of Louis the German, towards the middle and end of the ninth century, we find *humularia*, or hop-gardens, frequently mentioned, so that hops must already have been common in North Germany. During the succeeding centuries the cultivation of hops must have become still more general in that country, and the later the period the more frequent is the mention of hop-dues and hop-fields. The plant was so largely cultivated in the time of Albertus Magnus that it gave rise to express decrees, and hop-dues were afterwards quite general in districts with a Slav population, like Silesia, Brandenburg, and Mecklenburg. The first mention of hops being cultivated in Silesia is in 1224. In consequence of being mixed with this bitter plant, beer could be kept longer and transported farther, and gradually became an object of active trade. Flanders and North Germany had towns that grew rich and renowned because of their hop-beer. Of those in Flanders, Ghent was the most famous; and two of its brewer-citizens, the Arteveldts, father and son, could treat on equal terms with kings. In Germany, Eimbeck was celebrated, and its fame is still preserved in the Bavarian "Bock-beer," a corruption of Eimbeck-beer. Schmeller tells of an amusing propagation of the blunder: "As a counterpart to the too-vigorous butting of this Bock (he-goat), there was brought out a milder Gaiss (she-goat), chiefly in the Jesuits' breweries." It was relatively long before hops reached the neighbouring countries. In England they were not known before the reigns of Henry VIII. and Edward VI. Other additions to beer had long been customary: oak-bark, leaves of trees, bitter roots, various wild herbs, and in

Sweden milfoil, *Achillea millefolium*, or the plant there called pors, *ledum palustre*, or wild rosemary. We have already remarked that the Pæonians in Thrace brewed beer with the addition of *konyzē;* but what they meant by *konyza* is hard to say—at a later period the name is supposed to have meant the *erigeron viscosum*, *inula viscosa*, or *graveolens*, etc.

But was it really the great Migration that introduced this plant into Western Europe? and where was it first used as an ingredient of beer? History refuses to answer, and we are obliged to have recourse to a comparison of the names in different languages. But this time they seem only to mock and bewilder us. Half-agreements, possible transitions, tempt us to form a combination; their doubtfulness induces us to drop it again; if we decide upon one word as a point of departure, we can spin a thread from it with tolerable ease, but we could quite as well make the last link the first, and give the progress and development of the word a reverse direction.

We are therefore inclined to place the simplest form of word at the head, which is the Low German and Low Countries word *hoppe*, *hop*. It is already found in the Glosses of Junius, which Graff assigns to the eighth or ninth century: "hoppe = *timalus*" (mis-copied for *humalus?*); "feld-hoppe = *bradigalo*" (priadēla was Dacian for briony). It is most unlikely that this *hoppe* itself came from the Mid. Latin *hupa;* the latter is only found in one authority, and that a Netherlands one; *hupa*, no doubt, is merely the German word Latinized. An etymology might be found in the verb *hüpfen*, *hoppen*, to hop, only it does not seem natural to describe a plant that *climbs* from bough to bough as a hopper or jumper. But whatever be its derivation, there arose a diminutive form out of this *hoppe* by the addition of an *l*, which explains the French *houblon* for *houbelon*, as well as the Mid. Latin *hubalus*. Farther on, in Italy, where the plant was neither cultivated nor used, the foreign word coalescing with the Article became *lupolo*, *luppolo;* out of which popular name arose the later Mid. Latin *lupulus*, used by Italian authors. The botany of the Middle Ages was so slavishly dependent on the Græco-Roman literature, that a similar-sounding name of a plant was hunted for and happily

found in Pliny, who says: "There are few wild plants in Italy that are used for food; there is one growing among willow-bushes, the *lupus*, but it is more a sweetmeat or a delicacy than food." There is not a word about its being a *climbing* plant, and if the name had not resembled the Mid. Latin *lupulus*, no one would have thought of its meaning the hop. By the easy conversion of a *b* or *p* into *m*, especially before a *l*, there was also developed from *hupa*, *hubalus*, *hubelo*, a Mid. Latin *humlo*, *humulus;* and from the end of the eighth century this was the commonest and most widely diffused name for the hop, and accompanied the plant itself to the North and East. In Old Norse it became *humall*, in Finnic and Esthonian *humala*, *humal*, in all the Slavic tongues *khmelĭ*, in Magyar *komló*, in Modern Greek *choumeli*, etc. Thus the word, even in its transformations, would point to the custom having originated on the Lower Rhine; the German Franks, or even the Celtic Belgians would be the inventors of the bitter drink, and the hypothesis of Linnæus would fall to the ground.

But may not the Slavic *khmelĭ* be the ancestor of all the other names for the hop? May it not be the Slavic form of the Greek *smîlax*, *smîlos*, which, though not our hop, was a rough and climbing plant? It is worthy of note that among the Slavs the word has the general sense of *intoxication*, all its derivatives meaning "tipsy, to get drunk," and the like. This meaning is very ancient, as is seen by a passage in Zonaras of the year 1120, where *humeli* is "a drink that without wine intoxicates," just as the same Slavic word is now used for brandy and its effects. A proverbial formula in the Russian chronicler Nestor points to a period still older When, in the year 6493 A.M. (985 A.D.), Vladimir marched against and conquered the Bolgars on the Volga, who wore boots, he was advised by Dobrynia to leave the *boot-wearers* alone, for he could get no tribute out of them, and turn to those who wore shoes of bast. Then Vladimir made peace with the Bolgars, which they promised to keep "till the stone shall float and the hop-leaf sink."

The hop still plays a part in Russian marriage ceremonies as it did in the fifteenth century, and no doubt long before. When

Helena, the daughter of Ivan III. (Vasilievitch), was married to the Grand Duke Alexander of Lithuania, at Wilna, the Boyàr maidens unbraided her hair in the Church of the Virgin, put the kika (a head-dress in the shape of a magpie) on her head, and covered her with *hops*. Here also the hop symbolizes feasting, merry-making, and abundance. If, then, the Slavs introduced their plant into Germany, and the Germans adopted its Slavic name, then the Latin *humulus* and all the forms with *b* and *p* must have come from that name.

According to another derivation, Pliny's *lupus* may have lost its *l* in France (that being taken for the Def. Art.), and then, by confusion with the verb to hop, have been changed into *hoppe* (as *upupa* has become hop-hop and wiede-hopf). In support of this would be the fact that *lupus*, from its very name, must have been a *bitter* plant like *lupinus*, the wolf-bean, which is named from that quality, and which even the ancient Egyptians mixed with their beer.

Whichever of these derivations may be considered most probable, it cannot be denied that *hop*, *humulus*, and *khmelì* are only varieties of the same word, which were formed in passing from mouth to mouth. It was the Middle Ages that propagated the plant, and thereby created the true modern European beer, which is very different from the beer that used to be drunk out of cow-horns. At present Bohemia and Bavaria on the continent, then especially England, and, across the ocean, America, are the countries where not only the most but also the finest hops are cultivated; in the east of Europe, where this vine of the north was perhaps indigenous, there are now produced very few and coarse hops. In this case also is repeated the frequently observed fact, that a plant under human cultivation develops nobler qualities on a new soil than it ever possessed in a wild condition in its native land (note 87).

RETROSPECT.

We have now crossed the threshold of the Middle Ages, and it behoves us, at this point, to look both backward and forward at some general facts.

The result of the long process of assimilation, whose separate factors we have been trying to realize, was a homogeneity of culture in all the seaboard countries of the Mediterranean. And this homogeneity was exhibited outwardly in the unity of the Roman Empire, which was intrinsically a compendium of the countries lying round that inland sea. The garden-like culture and the most important cultivated plants of that region were of Semitic origin, and, like Christianity, had issued from its south-eastern corner. The once barbarous countries of Greece, Italy, Provence, and Spain, forest-regions with raw products, now presented a picture of blooming, and in some respects, degenerated culture in little, with pruning-hook, mattock, and spades, water-courses and cisterns, shorn trees, fish-ponds, and trellised aviaries, just as in Canaan or Cilicia. The summer foliage and swelling outlines of the northern flora had given place to the stiff forms of a plastic, motionless, evergreen, and dark-coloured vegetation. Cypresses, laurels, pines, myrtles, pomegranates, and strawberry-trees, etc., encircled the homesteads of men, or, running wild, clothed the rocks and promontories of the coast. Greece and Italy left the forming hand of history as essentially evergreen countries without summer rains, and with irrigation as the prime condition of prosperity and the greatest care of the planter. They had *orientalized*—or, more strictly, *semitized*—themselves in the course of antiquity, and even the date-palm was not wanting as a living proof of this remarkable metamorphosis.

Meanwhile, another and later influence of culture accompanies the Semitic stream from the countries south of the Caucasus. We may distinguish the two main constituents of the cultivated flora of the Mediterranean as the *Syrian* and the *Armenian*—taking the two words in the widest sense. The Armenian trees, while richer in fruit and more luxuriant than the primitive vegetation of Southern Europe, can stand the cold of winter better than the offspring of Syria; and when we are in doubt as to the origin of one of these foreign plants, we need only examine whether it keeps strictly south of the Alps, and perhaps of the Cevennes, or ventures under cultivation to cross, though may be in rare and degenerate specimens, that climatic wall of partition. The non-existence of the nut-pine in Germany, and even in France, teaches us that that tree cannot have come from Asia Minor. That the vine belonged originally to the South Caspian countries, but was brought to us by the Syrians, we recognise by its behaviour in Europe: it is only in the south of this continent that the vine bears abundantly and naturally, that it spreads itself comfortably out, and leads, so to speak, a careless life. But still it can be cultivated in Silesia; it has here and there strayed into the German woods; and on favourable soil, like that of Champagne; in sheltered valleys, as on the Rhine; on volcanic hills, like those of Hungary—it yields, with the help of culture, very fine fruit. The fig is a Semitic tree; and such, above all, is the olive, the queen of the Midland Sea, which founded its moderately large and strictly limited kingdom, *not* from Cyzicus or Sinope, but from Byblus and Gaza. On the contrary, the nut-trees, both walnut and chestnut, are eminently Pontic and Caspian plants. The chestnut scales the mountains of the Hesperian peninsula in dense broad columns, heedless of the cool breath of the heights, and has driven in the beeches to the upper slopes; and even in the west of Central Germany the walnut-tree skirts the roads, and the chestnuts cluster in modest little woods. With an intelligent delight in nature, Josephus described this mingling of different trees from dissimilar climatic zones in the Mediterranean flora, with special reference to the district around the Lake of Genezareth: "There the grape and fig, those kings of fruits, ripen almost uninterruptedly; side by side

with the fig and olive-trees, which delight in a milder air, stand an infinitude of walnut-trees, which are the most winterly plants (*i.e.*, of northern origin), and of date-palms, the hottest, nourish themselves on heat. It seems as if Nature were ambitious to make the fruit-plants of opposite climates vie with each other here." Columella says much the same thing of Italy. That many plants which lived in warm Persia beyond Armenia and Syria, and even originally in tropical India, could be naturalized in South Europe, was, among others, proved most brilliantly by the orange; and as one of the most useful of domestic animals, the fowl, had come from the countries of the Indus and Ganges about 600 years *before* Christ, so, about 600 years *after* Christ, as in proof that the movement of exchange had not fully subsided, came the Arachosian ox or buffalo.

In the first century B.C., the wide empire of which Italy was the centre—that is, the geographical region of antique culture—had attained its completion; as one immense colony of the East it surrounded the Mediterranean on all sides. The frontier provinces on the Euphrates to the East, and on the Rhine and Danube to the North, formed extreme and fluctuating acquisitions, with a different character; appendages too remote from the inland sea round which the classic world was grouped. But within these natural limits and the correspondingly fixed unbending framework of customs and of life, culture began to be stifled. During the first centuries of the Christian era there was visibly going on a continuous and rapid process of decay, which, like an incurable disease, finally led to dissolution. It is easy to compare this at first sight enigmatical fact, which had no externally constraining causes, to the ageing and dying of an individual organism; but as nations and epochs are neither plants nor animals, this favourite image gives no direct information about the process itself and its real operating causes. Perhaps some of these may be found in the following considerations.

A fundamental fault, and perhaps the true seat of disease, in antique civilization was the *uneconomical construction* of society and the State, and the accompanying absence of all *realistic-technical* sense in men. Under the Roman emperors the world became

poorer and poorer, and therefore more and more disheartened and oppressed. The taxes rose reign after reign, and still did not bring in what was wanted; it became harder and harder, and at last impossible to collect them. The means were resorted to of farming them out to the highest bidder; and these *publicani* compensated themselves by merciless extortion, just as in France before the Revolution. In the cities a few rich citizens, invested with high but honorary office, had to answer for the commune, and they and their fortunes fell a prey to the fiscus. In this distress the emperors had recourse to debasement of the coinage—a paper currency as legal tender had not yet been invented—the consequence of which was that prices rose and living became dearer and dearer. The latter fact was then attributed to the selfishness and malice of the vendors and merchants, and accordingly the celebrated edict was promulgated by the Emperor Diocletian, fixing the maximum price of all provisions, raw materials, wages, and common manufactures; a striking proof of the rudeness of the prevailing ideas on national economy—which, however, was exactly reproduced in the so-called Law of the Maximum of 1793. Anything beyond curing the symptoms, particularly any thought of meeting the increased demands of the State by unfettering production, and setting economic action free, never occurred to anybody. It is true, the Romans had built roads and bridges that still excite our admiration, but these rather served to increase the glory and grandeur of the rulers of the world, and the facility of military and administrative operations, than to further the aims of trade and intercourse. They were blocked by inland tolls, and these again were in the hands of governmental farmers, with all the evils and vexatious practices of such a system. Export and import prohibitions on the frontiers, unnatural corn-laws, etc., stopped the circulation of goods, and consequently the growth of capital and wealth. Added to this were the State monopolies, the number of which was continually increasing, and the Imperial factories, that worked with only seeming advantage. The insatiable greed of the millitary State, which was kept almost constantly on a war-footing, could not be appeased by any amount of production on the part of the agricultural and manufacturing

population; what the taxes left was consumed in the quartering and provisioning of the troops. The soldiers, to whom, even before the end of the Republic, lands in Italy had been forcibly and arbitrarily apportioned, now played the first *rôle*. They were for the most part unmarried, they squandered in sensual pleasures what they had collected in war, and were lazy and inclined to excesses (note 88). In the undeveloped condition of finance, and ignorance of the natural laws that govern it, money-dealing and the easy circulation of capital could be no element of increasing wealth. The rate of interest rose to an unheard-of height, and the prohibitions intended to limit usury only made the matter worse.

As the taking of interest at all was in ancient times considered despicable and indeed unlawful, so also the principle of the *division of labour* was not comprehended. Cato and Varro positively warn men against it: the former says the landlord ought to be a seller and no buyer; the latter, that whatever can be made by the people on the estate should not be purchased elsewhere. So home-work was not reckoned as money expended; and the larger households kept their own smiths, joiners, shoemakers, coopers, etc., while in the cities there was no class of working tradesmen and artisans. No wonder that technics remained imperfect, for, besides all this, the ancients were not naturally addicted to handicraft. To observe, without prejudice, the naked reality of things, to adapt means to ends, and so emancipate themselves, were not a characteristic feature of the ancients. They lived, an aristocratic race, in a dream of religious fancy, in an ideal show, swayed by a passion for artistic representation, and spellbound by the Beautiful. If we examine the remains of Pompeian tools and utensils, how tastefully and elegantly they are designed, though wrought, perhaps, by the hand of a slave; but, for the most part, how childishly! The rational technics that do please us in them were not the result of sober observation and sensible calculation, but an old tradition, beyond which they did not go, and which could not but deteriorate from generation to generation. And, as technics sank, so did taste, so did the grace and purity of forms and nobility of thought. For these are not absolutely

separated; what is gained by technics also serves the intellect; every extension of its limits gained by the former allows the latter a higher flight into a hitherto unknown world. If, for example, the ancients had been able to develop in a more varied manner their scanty musical instruments, and to invent, say, the organ and the fiddle—which is first found among the Arabs—there is no doubt they would also have put a new soul into their music.

How stationary the mechanical arts remained among the Romans, and how far they were from regarding nature as an object of intelligent inquiry, is particularly shown by the history of Roman *navigation* and Roman *agriculture*. The size and limits of the immense empire afforded occasion enough for venturing on the high seas. The rulers of the world were in possession of the Iberian, Lusitanian, and Mauritanian coasts; yet Pliny was obliged to describe the not distant Canary Isles from the jottings-down of King Juba; it never occurred to Roman seamen or traders to venture so far. The island of Hibernia, on which, perhaps, Pytheas had landed three centuries before Christ, remained a sort of cloud-land to the Romans; it lay hidden somewhere behind the dangerous Bay of Biscay and the stormy rock-bound Irish Channel. The Roman ships were nothing but coasting vessels, which feared every foam-whipped promontory and ran into harbour on the approach of winter. The winds, waves, and seasons were regarded in a mythic sense; the ship's beak was artistically carved and the ship itself imperfectly constructed. The Red Sea had long carried on a brisk trade with India, and Strabo learned that one hundred and twenty ships annually left the port of Myos Hormos for that distant land; but neither the Indian numeral system nor the magnet-needle reached the Roman West, which, tethered in its own narrow circle, was indifferent to anything new, and derived no enrichment or incitement from the East, as Europe did in the Arab period. To the north-east, or the Pontus Euxinus, it was the same as on the Red Sea. The Romans possessed a number of fortified places on the shores of the Pontus, but the trade that passed through those districts was all in the hands of Asiatics, and no progress was made in the geography of the Caspian Sea. How different the activity of the

Genoese there during the Middle Ages, citizens as they were of a small town, and not protected, like the *civis Romanus*, by the awe and majesty of the Roman name! When they had firmly planted themselves in the Crimea, they explored the Caspian in their own ships, and their merchants settled in numbers at Tauris (Tavriz), in Persia. There they were found by another Italian, the Venetian Marco Polo, when he passed that way, both to traverse the whole enormous continent and then, like a Herodotus of the Middle Ages, to describe it. The Roman was not the man to do either; he had not a mind open to the outside world; where he could not conquer, nor lay down his own political, social, legal, and military forms in regular lines like a piece of masonry, there was no fascination for him; that was not the atmosphere in which he could live and move.

Roman agriculture resembled Roman seafaring; in it, also, there was no developing impulse. The tools were still the imperfect ones handed down by their forefathers; the methods were the traditional ones, or at best increased by others just as unscientific, forming a medley of purely practical experiences, real or supposed, and of superstitious fancy. Manuring and the rotation of crops were known, but not duly valued nor carried out to their consequences. At last the soil was exhausted, cornfields were changed into pastures, famines were frequent, and the importation of grain became a principal care of the Government. Italy produced on an average only the fourth part of the corn consumed. The true reason of this want of success lay in the high price of labour, which, in turn, was the result of economical and technical inaptitude and indifference to natural science.

Among the reasons that led to the destruction of ancient society, it is common to give the first rank to the practice of slavery. It is certainly one of the things that are incompatible with the highest industrial development, but at certain stages of civilization—leaving out of consideration the quality of race and the difficult political and social problems therewith connected—it is a natural, and even sometimes a beneficent, institution. It existed, also, among the barbarians, who put an end to the antique life; it was continued with undiminished force in Germanic-Romance Europe, where it

naturally and gradually disappeared, passing through several stages, in consequence of the progress of economical culture. In most respects the condition of the slaves and *coloni* of Rome differed only in name from the severe domestic servitude and feudal constitution of property that prevailed in modern Europe until not very long ago. Nay, in the condition of slavery there was often preserved a remnant of popular rights. At all events, the slave could not be dragged from the plough to the camp of the legions, while the free population was decimated by conscription and only gradually recruited itself by the frequent manumissions. Even in Rome, if the times had not otherwise been so hopelessly retrograde, slavery could not always have maintained itself in face of the growth of economical and political power.

One result of this general misery was the unchecked spread of the new and visionary religion from the East, which opened to the despairing race of men a saving retreat into the innermost recesses of the soul. Christianity, while it "dissolved the depths of the heart" and placed the one thing needful in the inner man, by that very means undermined the foundations on which rested the ancient world. The Christian, to whom the poor were the blessed, and to die was gain, cared little for the acquisition and increase of earthly goods; his spirit lived in another world beheld by faith, and he laid up for himself treasures in heaven. We know that amid the general decay of intellectual production, Jurisprudence, that root and core of the Roman nature, not only held its ground, but went on flourishing. Yet in the long series of successive jurists there is scarcely one Christian; what should such care about regulating the conditions of this brief pilgrimage? His life was given him to save his soul, not to settle legal claims. He was even indifferent to a knowledge of nature and every kind of science; in believing he possessed all truth, and in any case the end of things present was to be expected daily. Also in the Roman camp the convert to the new religion faced the enemy with very different feelings from those of the true Roman of the old time. Victory was no joy to him, and defeat and death only set him free from earthly tribulation, or served as a wholesome trial. His real enemy was the heathen, with his worship of beauty

and his self-content. Thus war and law, those pillars of Rome, were deprived by the breath of the new Christian spirit of their hold and their supporting power.

Another slowly operating destructive force, identical at bottom with that of Christianity, was the mixture of races, the intrusion of Oriental blood into the population of the West. The Roman Empire comprised, in one general political framework, very diverse elements of very unequal cultural value. Rome was a pandemonium of diverse National minds, some unripe and crude, others hardened and fettered in world-old traditions. Inflexibly as the Roman State might subject these dim forces of nature to the rule of common sense, it was still being gradually destroyed by their secret action. The rapid fall was only a consequence of the *transformation of race.* Natives of Africa and Egypt, Orientals of every type, European and Asiatic Greeks, Spanish Iberians, Illyrians, and Thracians, deluged Italy, intermarried with each other, took possession of the organs of the State, of education, and of literature, and not seldom even mounted the Imperial throne. As early as the time of Cicero and Cæsar, all the cities, and Rome among them, were crowded with the circumcised, who were agreed among themselves; and however senseless and anti-human their opinions seemed to the Romans, yet with their stubborn bent of mind they imperceptibly revolutionized the general consciousness. It was the Jewish communities that in the first instance paved the way for Christianity, and scattered the germs of it, not only in outlying quarters of the capital, but in all the provinces. Any one who should nakedly assert that it was not the Germans, but the Jews, that destroyed the Roman Empire, would be saying too much, and yet would be nearer the truth than the ignorant might imagine.

"Oh that Judea had never been subdued by Pompey and Titus!" complains Rutilius Numatianus, in his "Itinerarium." "Thence comes, and now spreads far and wide, the infective matter, and those who were once conquered fasten the yoke on the necks of their conquerors!"

MODERN EUROPE.

THE limits of ancient culture were burst open in another and brighter direction by the entrance of North-Western and Central Europe into the history of mankind. This breach was first effected by the great Cæsar, when he conquered Gaul and Belgium, and set foot in Britain and Germany. Over those new territories blew the breath of the ocean, and endless forests of gigantic trees shaded the virgin soil. Frequent rains and mists kept the land moist even in summer; the trees shed their leaves in autumn, and in winter the fen-lands froze into firm ground. In contrast to the limited scenes of the mountainous South European peninsulas, and the crowded horticulture of the East and South, the Northern plains stretched on all sides in vast unenclosed expanses, and the life within them bore the stamp of these larger proportions, as the wave of the ocean is broader than that of the inland sea. Where the ground was cultivated, as in Gaul, the corn grew in innumerable fields; but everywhere beyond was the forest-region, the home of large game and beasts of prey—the farther east from the Rhine the more rarely interrupted by sporadic culture.

Civilization was at its commencement, especially among the Britons, Belgians, and Germans; it was already more advanced among the Gauls, but still in its infancy compared with Italy, the heiress of Greece and the East. Nevertheless, the Central European and Transalpine technics of life, though undeveloped, had many advantages arising spontaneously out of the climate, vegetation, and soil, or the totally different point of departure. We could count up a whole series of inventions that came to the

Romans from Gaul, but which they rather noted down than made a practical use of; we will only mention, as examples, the wheeled plough, the carriage called *rheda*, soap, the linen shirt, and manuring with marl.

In the religious, moral, and juridical conceptions of Britons and Germans, the Romans found their own long-forgotten infancy again: *they* had developed this primitive condition by a long succession of stages, into a firmly fixed and variously accommodated system, carried out in detail, and everywhere penetrated by shrewd intelligence, and rich experience of human life; but this invaluable acquisition of culture had stiffened into convention, and was felt as a fetter; among the Germans there still existed a direct, rude, but fresh natural sentiment; and thoughtful Romans, like Tacitus, longed for these beginnings of life, which they describe with unmistakable partiality, and which, in a kindly illusion, fanned them like the breath of freedom.

To elucidate this attitude of the old civilized nations towards the Northern inhabitants of the forest, compare the popular epics and lyrics of the Germans to the tragedies of Seneca: the former are elementary, but penetrated with inherent poetry; the latter belong to a higher class of art (to which the whole of the Middle Ages was not able to rise), and bear the stamp of exquisite taste, but the spirit has fled—in the one, we have fancy and feeling far in excess of the power of expression; in the other, a frosty application of once inspired but now hollow forms. The ancient Greeks saw, often with wondering sympathy, a similar but more glaring contrast between themselves and the Pontus regions, which were so poor and wretched, and yet again so rich. Thither the Greek ships took wine and oil, the twofold symbol of antique culture, "and whatever else civilized life has to offer," says Strabo; and received in return corn, skins, cattle, honey, and—powerful human bodies for service and labour (Polybius). Very early the Greeks had found in that northern land a race of the justest men; and even a wise philosopher, Anacharsis, the far-travelled author of beneficial inventions, had there his home Greeks had settled in the heart of Scythia, as Roman tradesmen did in the capital of Maroboduus. But no new creation resulted

from the contact of Hellenes with the peasants and nomads north of the Pontus, and still less a new epoch: one national wave after another washed away all that had gone before; Turkish tribes rode forth from the wilds of Asia, trampling down harvests and men; Slavs from the north poured over the Danube to the Adriatic Sea, and deep into the Greek peninsula; and lastly, following these, a Finnish race from the Ural pushed its way through the midst of them, and occupied the beautiful Pannonia, once inhabited by civilized men of noble race, but now become a horse-pasture.

It was otherwise in the West. There, even when Rome politically was fallen, Italy, Spain, Gaul, the British Isles, and Germany still formed an internally united whole, the European community of nations, whose ideal centre was the Eternal City. To this scene of action of the Middle Ages the Byzantine Empire in the East stood related very much as Western Asia had once been to the Greeks: in many respects more cultivated, but enslaved and deeply degenerate, with barbarians encamped around it. In the intercourse between the North and South, between the Teutons and Rome, lies the sum and substance of Mediæval history. From Germany had come the hosts that reduced the proud military-administrative edifice of the empire to ruins; they worked as liberators, because they substituted *individual life* for a closely dovetailed, iron-bound unity. On the other hand, Germany, even before the great Migration, had not been able to resist the seductions of Southern culture; and now, during the Middle Ages, experienced a constant *Romanizing process* that gradually penetrated all its veins; its woods were rooted up, settlements, and very soon towns, were founded, and the customs, modes of government, and laws invented by antiquity were applied on the new ground. An important centre of the fluctuating movement of civilization was Belgium. There, at the time of Cæsar, dwelt warlike Celts, who still retained the sound freshness of nature; resembling the Germans, oppressed by them, but finally mixing with them; afterwards becoming a model to the Germans of advanced civilization, of agriculture, industry, and freedom, and to the old Roman countries a source of youth. Belgium, North-

east France, and the Rhineland on both sides of the river, seemed destined to become a peculiar kingdom with an individual stamp, a link between the two halves of Europe; but this tendency was not fulfilled, and that region remained an uncertain border-land, sometimes falling to the one, sometimes to the other part. But it was colonists from Flanders who taught the Germans the higher forms of agriculture; from Burgundy proceeded cloth and linen weaving; there, too (in St. Denys, Rheims, etc.), Gothic architecture was invented, and a thick crop of cities and cathedrals, each mightier than the other, was sown abroad. There the fables of Reineke Fuchs circulated, and the fanatic fantastic idea of the Crusades was first engendered; there the most modern of arts, music, had its birthplace, and oil-painting, if not invented, was at least applied and perfected. But while Germany was being educated and instructed by antique culture, it was also enlarging the circuit of Europe by unflagging colonization towards the East —one of the greatest and never too highly to be estimated phenomena of the Middle Ages. In the South this Germanic expansion proceeded from the Bavarians, following the course of the Danube; in the North from the Saxons, crossing the Elbe, the Oder, and the Vistula, and reaching far up the coast of the Baltic: in the former set of Germanized countries the Nibelungen legends at least received their last form, and the colonial town of Vienna rose to be an imperial capital; in the latter, Copernicus made his appearance, and, centuries after, Kant, Fichte, Winckelmann, and Humboldt were born; and while in the South the kingdom of St. Stephen was drawn within the circle of the New European civilization, in the North the wide territory of the Piasts and Jagellons was opened to the intellectual life of the West.

When Germans had thus inundated the Western Empire, and Turks and Slavs the northern half of the Greek Empire; on the other hand, from the seventh century, to complete the destruction of the ancient world, the storm of Arabs broke loose over Syria and the still blooming north coast of Africa. In the first rage of Islam the destruction was fearful, and has never to this day been made good—"when buds a new belief," the work of many past generations is "uprooted like an evil weed;" but after the first fanatic

paroxysm was over, the Arabs increased the capital of culture inherited from antiquity by many valuable contributions—for example, the compass, the so-called Arabic numerals, the beginnings of chemistry and pharmacy, of commercial and harbour praxis, many new plants, and so on. Arabian culture itself passed away as a mere episode, but what it had brought with it was farther developed in the West; and when the Italian seaports flourished and instituted banks and exchange, when gunpowder and linen-paper were invented and more generally employed, then, after long centuries of barbarism and superstition, a turning-point was reached, from which life began again to rise. If the Romans had been able to make the last two discoveries, perhaps the enormous break in the steady advance of culture, which we call the Middle Ages, would have been avoided. At the sound of gunpowder the Huns would perhaps have fled back into their steppes, and paper might have prevented the destruction of Græco-Roman literature —for what we possess are only miserable and scattered fragments. In the fifteenth century Italy had become so much stronger again, that Humanism, not only literary, but moral and political, could pick up the thread which antiquity in its exhaustion had dropped. The world opened itself to the eye which had recovered its sight; men felt once more the joy of existing in the midst of Nature, and began to long for a knowledge of her laws and her mysterious being. Armed with the magnet, bold seamen sailed from Lusitania and Iberia to America, the East Indies and China; before them spread, in thousandfold abundance, the natural wonders of the New World that Seneca had once foreboded—for it was not given to the Roman to do more than forebode. Mathematics, physics, mechanics, astronomy, anatomy, and botany, bestirred themselves with youthful zeal—the Church observed them mistrustfully, but could no longer stifle them; by help of knife and balance, crucible and retort, lever and pump, thermometer and barometer, telescope and microscope, pendulum, logarithms, and infinitesimal calculation, the ever fuller and more comprehensive liberation of humanity was prepared. That which distinguishes the modern from the ancient world is natural science, technics, and political economy.

Turning from these general observations to our immediate

theme, the nomenclature of the German language teaches us that, from the Migration of Nations till far into the Middle Ages, all the produce of German gardens and a great part of agricultural practices were introduced from Italy and Gaul or South France. As far as the climate permitted, whatever Italy had either possessed from the first, or had acquired from Greece and Asia, was naturalized by a continued migration of culture. Not only the tree-fruits—pears, cherries, plums, mulberries, grapes, and all the manipulations of pressing, wine-making, including the keller (cellar), the tonne and kufe (tun, coop), the flasche (bottle), becher (beaker), kelch (chalice), krug (crock, a Celtic word)—but also flowers, vegetables, kitchen and medicinal herbs, like kohl (*caulis*, cabbage) and kabes, kappes (caputium), erbse (*ervum*, pea), vicia (vetch), linse (*lens*, lentil), petersilie (parsley), zwiebel (onion), kümmel (cummin), beete (beet-root, Slavic *sveklŭ*, a corruption of *seutlon*), rettich (radish, which the Romans themselves got from Syria under the first emperors as *radix Syria*), meer-rettich (quasi mare-radish, corrupted from *armoracia*), münze (*mentha*, mint), coriander, kerbel (chervil), *liebstöckel* (*libisticum* for *ligusticum*, lovage), lavender, melisse (balm), polei (*pulegium*, penny-royal), fenchel (fennel), anise, karde (teasel), lattich (*lactuca*, lettuce), spargel (asparagus), and many others—have names derived from Latin; sichel (sickle) is the Latin *secula;* flegel (flail), *flagellum;* mergel (marl), *marga*, *margila;* speicher (granary), *spicarium;* butter and cheese (käse), horse and ambling palfrey (pferd, zelter) are Latin; so are the weights and measures: meile, centner (cwt.), pfund, scheffel (bushel, from *scaphum*, *scapilus*), seidel (pint, from *situla*), etc. Charlemagne's "Capitulare de villis" and the "Specimen breviarii rerum fiscalium" give a distinct picture of how the Italian or Gallic villa, with all its belongings, plants, animals, and the necessary utensils and modes of labour, was transferred to German soil. In Italy itself, in spite of the Migration and the chaotic dissolution, the number of cultivated plants and of useful domestic animals had not as a whole diminished, so tough is private life, and so unweariedly in its small circles do healing and restoration go side by side with destruction. During the thousand years of the Middle Ages down to the discovery of America, we

have not one tame animal *more* to record; the number remained stationary in spite of the movements in Inner Asia, the great Arabic dominion from the Indus to the Tagus, and the incursions of Turks and Mongols. But these events enriched the Western flora with some integral members, among which, as is only right, we will first consider the fruits of the field.

THE RICE-PLANT.

(ORYZA SATIVA.)

THE rice-plant, which grows on damp rich bottoms in tropical and and sub-tropical climates, was everywhere cultivated in India from ancient times. The marshy nature of the soil at the mouth of the Indus must have been particularly favourable to this kind of grain; but even in dry and more elevated lands the sowing could be so timed, that the tropical rain falling at stated periods should nourish the springing plants. Though poorer in real nourishment than wheat, rice was and is the food of greater masses of people than wheat, not only in India proper, but in the peninsula beyond the Ganges, in the South of China, and the islands of the Indian Ocean, till in the extreme East the sago-palm takes the place of this cultivated grass. In the region thus described, rice is only wanting in mountainous places where there is not sufficient warmth, or where the monsoon rains cease, and artificial irrigation is impossible. Rice is in so far no real bread-material, that it is seldom ground and baked; it is generally eaten as a kind of porridge consisting of white and swollen grains, often mixed with fat of some kind or other, called by the ancient Greeks *chondros*, or grain-porridge, and by the Latins *alica*, or frumenty. The art of preparing an alcoholic drink, *arrac*, from rice, is an old Indian one, for the Greeks had already heard of it; although what Strabo and Ælian speak of could not have been the strong distilled waters that we now call arrac and rum, but rather a kind of beer or wine. The Sanskrit name of rice was *vrîhi* (not yet in the Rig-veda but in the Atharva-veda); this, passing into the Iranic languages would become *brîzi;* and out of this Old Persic form the Greeks

made their *oryza*, *oryzon*, whence came, through the Latin, the name used by all the nations of modern Europe.

The West first made acquaintance with rice during the wars of Alexander the Great, though some doubtful traces point to the middle of the fifth century B.C. Athenæus says that Sophocles had spoken of an *orindēs artos*, which later authors explained as bread either made of rice, or of an Ethiopian grain like sesame. If Sophocles himself connected this *orindēs artos* with the Ethiopians, he might mean Homer's Ethiopians, who "dwelt towards the rising of the sun," or the Ethiopians of his friend Herodotus, *i.e.*, the inhabitants of the countries of the Lower Indus and the neighbouring coasts; and then both meanings would have agreed. The nasalized form *orinda*, *orindion*, agrees remarkably with the Armenian *brinz*, Persic *biring* or *biranǧ*.

Herodotus himself, who had already heard of the wool which grew on trees (cotton), mentions a tribe of Indians who fed on a wild plant, the grains of which, about the size of millet, were enclosed in a husk, together with which they were boiled and eaten. This also may be rice; the faults in the description—for example, that rice, which at the time of Herodotus had long been a cultivated plant, is called *wild*—may be explained by the uncertainty arising from the distance at which the marvellous land of India was observed. Herodotus does not seem to have known of any name for the grain he described. When the Macedonians conquered Asia, the Indian rice became fully known to the Greeks. Theophrastus correctly describes the plant, and the use made of it. Aristobulus, who had accompanied Alexander on his Asiatic campaigns, and who, when very aged, wrote a history of the king, and a description of the countries he had traversed; not only describes with surprising correctness (as quoted by Strabo), the mode of cultivating rice; but mentions Bactriana (on the Upper Oxus), Babylonia and Susis (both Semitic regions on the Lower Euphrates and Tigris), as lands where rice was cultivated. The last item is confirmed by Diodorus, who, describing the battles between Eumenes and Seleucus, says that the first, having no corn, fed his troops in Susiana on rice, sesame, and dates, in which products that district was uncommonly rich

So that, during the Persian dominion, and no doubt as a consequence of it, the cultivation of rice had advanced from the Indus to the Oxus and Euphrates, and thence also was derived the name *oryza*. (The words, "and Lower Syria produces it too," may be an addition of Strabo's own, in whose time the circle of this culture had widened.) A third informant, Megasthenes (an agent of King Seleucus in the far East about 300 B.C.), had seen how rice was eaten at Indian courts, and no doubt himself shared in such meals: each of the guests had a kind of table in the shape of a stand set before him, on which was a golden dish; into this dish boiled rice was poured, and then mixed with various ingredients of Indian manufacture. So in that ancient time the *pilav*, now common all over the East, was in general use. After the founding of the Greek kingdom in Egypt, there was a brisk trade carried on in rice, as well as other Indian products, to the ports of that country by way of the Persian Gulf and Red Sea. The Greek and Roman physicians used rice for making a glutinous drink, and rice is now and then mentioned as serving that purpose. From a passage in Horace, where a miser is prescribed such a beverage and is shocked at the price, we learn that rice was then dear: the distance from which it came, and the fact that it easily spoiled, must have increased its price. It was not yet used as a common food—Apicius mentions it only once as an ingredient—and still less was any attempt made to cultivate the plant in the West.

The merit of introducing rice into Europe is due to the Arabs in Spain. Being long acquainted with the grain through the Indo-Ethiopian trade which passed through their hands, and accustomed to rice as food, the Arabs, after conquering Egypt, had naturalized its cultivation in the Delta of the Nile, and in the Oases. In their endeavour to arrange their newly conquered lands on the model of those from which they came, the Moors would of course plant the watery lowlands of Spain with the favourite grain-bearing grass which is still so dear to the Orientals. For this purpose, besides the basins of the Guadiana and Guadalquivir, the fat marsh-lands of the province of Valencia were especially calculated, and then the Arabs, who were masters of irrigation,

soon won from the soil the desired harvests, the surplus of which even reached the coasts of other European countries. After the gradual conquest of the Moorish kingdoms by the Christians, the Arabian rice-fields became the property of the latter, whose religion fortunately did not forbid them to continue the work of the infidels. Towards the end of the fifteenth century, and in the beginning of the sixteenth, when the world was bent upon renewing itself, and had not ceased to wonder at everything that came from Africa, India, and America; when Spanish rule was established in Naples and then in Milan, while Italian commerce with the Levant still flourished;—the cultivation of rice was brought to Italy either from Spain or, after the example of the Spaniards, direct from Egypt, and was first carried out in the places where canalization and irrigation had been practised from of old, that is, in the Milanese and the Venetian republic. A source of wealth seemed thereby opened to the countryman, and every one applied himself with eagerness to the new culture, much as was the case with cotton in South Italy at the time of the Civil War in America. Pasture and wheat-lands, far and near, were turned into rice-fields; and from the mouths of the Alpine rivers, Po, Adige, etc., from the lowlands about Mantua, Ravenna, Ferrara, etc., the cultivation of that plant, which was in fact more profitable than the usual cereals, spread even to the upper districts, to the Romagna, Piedmont, and so on. But it was soon found that the whole country was thereby changed into an artificial swamp, and that fever and malaria increased to a fearful degree; and though the greed of gain is great in that southern land, the fear of bad air and the evil effects of stagnant water is quite as potent. There began an opposition on the part of all the governments, which resulted, from the first half of the sixteenth until the present century, in a series of statutory limitations and prohibitions. Everywhere the rice-fields had to be so many miles distant from a large, and so many from a small town. Then followed still more rigorous ordinances, according to which only such land should be planted with rice as was too swampy for any other cultivation, and in the neighbourhood of which was no inhabited house or frequented high-road. A special commission of inspection, with

out whose permission not a grain of rice could be sown, watched over the maintenance of the legal regulations. Though these limitations are still in force, the cultivation of rice is in a flourishing state in Venetia and Lombardy, and yields a considerable surplus for exportation. The cultivation itself demands much care and labour, no less in the first preparation of the level fields surrounded with dams and ditches, and the subsequent inlet and outlet of water, than during the harvest, and the thrashing, pounding, and cleansing of the grain. And then the constant wading and dabbling in mud and water, the hoeing, etc., have not the best effect on the health of the labourers and their children.

In South Italy, where the heat and danger are still greater, the interference of the authorities was more active in proportion, so that whenever rice threatened to get the upper hand it was regularly put down, and is now limited to a few uninhabited districts. The produce of the whole peninsula in rice is calculated at more than two million hectolitres, of the value of about 70 to 100 million lire. In Spain, this old Arabian culture has very much declined, probably in consequence of sanitary prohibitions; it has quite disappeared from South France; in European Turkey, Busbequius in the sixteenth century saw rice-fields near Philippopolis. Though the quality of South European rice is generally excellent, the trade of that region is insignificant in comparison with the quantities that are brought to market from the East Indies, Java, and especially America. It happened with rice as it did with sugar, coffee, and cotton; it was its introduction into the New World that first made it a world-product. The Southern States of the Union, Florida, Mississippi, Alabama, Louisiana, Georgia, and especially South Carolina, produce rice to the value of millions of pounds, and, in spite of the great distance, the prices compete with those of Italy. Europe was the half-way station for this produce, to which the Arabs, those old intermediaries between East and West, brought it, and from which others transported it further to the New Indies beyond the ocean.

MAIZE.

(ZEA MAIS.)

AMERICA, in its turn, made a still more important present to the Old World in its *maize*, which now feeds a large part of South Europe and the Levant, and has penetrated to China and Japan, and to negro tribes in the very heart of Africa, who have never seen a European. Columbus already found this grain in Hispaniola, and it was grown all over America as far as agriculture was practised and the climate permitted. From the beginning of the sixteenth century grains of it were sown in Spanish, Italian, French, German, and English gardens, and soon the plant was cultivated on a larger scale in the fields. The Venetians propagated it in the East; under the name of *kukuruz* it became naturalized in Turkey, the Danubian countries, and Hungary, furnishing material for a favourite dish; for example, the *mamaliga* of the Wallachians, in which plum-brandy, the so-called *tchuka*, must not be wanting. It came to Germany as Turkish wheat or *wälsch-korn* from Italy. "Our Germany," says Hieronymus Bock (Tragus) in his "New Kreüterbuch," Strasburg, 1539, "will soon be called *felix Arabia*, because we accustom so many foreign plants to our soil from day to day, among which the large *wälsch-korn* is not the least important." In North Italy *polenta*, that is, maize-porridge, is the usual food of the peasant; and maize, especially in the fertile plains of the northern part of the peninsula, rivals wheat. Though the latter produces a better grain and finer flour, as well as more wholesome nourishment, it does not give so large a yield as the first, and has therefore been obliged to retreat step by step from the best soil (note 89).

BLACK MILLET.

(SORGUM VULGARE.)

It must have been still easier to transplant the Black Millet, the *dhorra* and *dokhn* of the Arabs, from India to Europe, for it appeared in Italy shortly before the time of Pliny. He describes the plant exactly, and is also correct when he says that the sorgo is the most fruitful of all cereals. Unfortunately the value of this grain bears no proportion to its richness of production, and as it is not much recommended by its colour and taste, its cultivation was very likely abandoned again. At least we hear no more of the *dhorra* after Pliny, and it was the Arabs that introduced the grain so common in the countries about the Red Sea and in the interior of Africa, to the Mediterranean lands for the second time. Peter de Crescentiis, about 1300 A.D., knows it under the name of *milica* (now *melga*, *melica*, and in other districts *saggina*, *sorgo*), and describes it as being used for fodder, and, in time of scarcity, as being mixed with other flour. The different species and varieties of the plant are still found in Italy, but their cultivation is limited; in a green state it is used as fodder, the grain serves to feed swine, for it is hurtful to birds, the beard for brooms or brushes according to size, and the straw for the plaited walls of simple huts. As rye is a too northern, so black millet is a too southern plant, a negro corn; both of them, despised for their darkish flour, only straggle into Italy to each other's astonishment when they happen to meet (note 90).

BUCKWHEAT.

(POLYGONUM FAGOPYRUM.)

As if in compensation for the maize it bestowed on the South, Northern Europe, at the same time or a little earlier, acquired from the interior of Asia a grain hitherto unknown to the civilized world, namely, Buckwheat. The fatherland of the dicotyledonous plant—for it is not a kind of grass like the other cereals—is North China, South Siberia, and the steppes of Turkestan, and it must have commenced its migration to the West in company with the nations that issued forth of those immeasurable expanses. As Plano Carpini, Rubruquis, and above all Marco Polo, forced their way, for the first time since there was an historical Europe, to those deserts of summer heat and winter ice, and to the barbaric courts of small-eyed yellow men; so in the contrary direction, together with the unspeakable harm caused by those terrible races, there came some stray habitudes, aptitudes, plants, which might be regarded as acquisitions; these were first introduced to the Eastern neighbours of the civilized nations, and then by slow advances to those nations themselves. Marco Polo himself, who actually saw the true rhubarb in its original home and describes that wonderful root, is silent as to buckwheat. But the first botanical authors after the beginning of the sixteenth century are already acquainted with that grain as introduced from abroad within the memory of man. Ruellius writing in 1536, and the younger Champier apparently about 1530, speak of "fields in France ruddy with Turkish wheat, which came from Greece or Asia in the time of our grandfathers;" this would mean for France the latter end of the fifteenth century, and for Germany

some fifty years earlier. We are told nothing definite about the route by which it came. The name *Turcicum frumentum*, early replaced by another, *blé sarrazin*, *grano saraceno*, only dubiously hints at the heathen world beyond Christendom. The names used in North and South Germany are different, and therefore those regions cannot have got the plant in the same way. The Low German name, *buch-weizen*, was plainly given on the spot, and refers to the resemblance of the grains to beech-nuts; the Netherlands *boek-weyt* passed to North-eastern France in the form of *bouquette*, *bucail*, etc., and therefore that part of France acquired buckwheat from Brabant. The Low German Bibles (of Cologne 1470, of Lubeck 1494, etc.) use *boekwete* for the word which Luther afterwards translated by spelt, and the High German Bibles before Luther by vetch. The oldest mention of the North German buckwheat is said to be contained in a register of the Mecklenburg bailiwick Gadebusch, of 1436. The other name, used in South Germany, *heiden-korn* (heathen-corn, now commonly *heide-korn*, as if it were corn that grew on heaths), which is already found in the second half of the fifteenth century, has the same meaning as the Czech *pohanka*, *pohanina*, Polish *poganka*, Magyar *pohánka—i.e.*, corn acquired from the pagans; but as other Slavs of the same part of the world say also *aida*, *haida*, *haidina*, which are evidently borrowed from the German, it is doubtful whether the Bohemian *pohanka* be not also *heiden-korn* translated. A third German name *tater-korn*, *tatel-korn* means *frumentum Tatarorum*, and has its analogy in the Czech and Little Russian *tatarka*, Magyar *tatárka*, Finnish *tattari*, and Esthonian *tatri*. In this word there would lie a clear hint from *what* nation East Europe derived buckwheat, *i.e.*, from the Tartars, by which name was understood, not only the true Volga and Crimean Tartars, but also the tribes of Mongolian race. But it is strange that the Russians are unacquainted with this name, and therefore it seems more probable that what was meant was gipsy-corn, as that wandering tribe were, and still are in some parts, called Tartars or Heathen, and it is very possible that they propagated buckwheat during their wanderings in Western Europe, which were very frequent in the fifteenth century. The Russian names *grecha*, *grechukha*,

grechikha, etc., also in German dialects *grücken*, means *Greek* corn, that is, corn from the South, from foreign lands, in the same way as the adjective *wälsch* (Italian) is used among the Germans. Then there is a name in Russia, in the districts of the Lower Volga, *dikusha*, wild corn—that is, either corn that grows wild, or that came from the savages, the nomads on the other side; besides which the Tartar word *kurluk* is also used. Pallas often saw, during his travels, how some of those nomads, in their passing attempts at agriculture, planted the Tartar buckwheat, *polygonum tataricum*, and others could not defend their land from it in the shape of a weed. Linde, in his dictionary, says that the word and plant are not to be found in Polish inventories before the reign of Sigismund August, therefore not before the second half of the sixteenth century. But the *gryka* may only have been rarer then than afterwards. Taking all in all, it was the Turkish and Mongolian races that introduced this new grain into the district of the Black Sea, whence (if we leave the gipsies aside) it came through maritime commerce *viâ* Venice and Antwerp to Germany and France, and of course to the Netherlands; there is no clear trace of its having reached the Germans from the Slavs. It was recommended by its agreeable taste and short period of growth, which last is a confirmation of its origin in the severe North Asiatic climate. Now vast Russia, agreeably to its geographical and historical situation, is very productive of this corn; and the so-called *kasha*, a pap or pudding of buckwheat flour, is an indispensable national dish which has not, like so many other things, been forced upon the Russians from Europe.

In North Germany—Holstein, for instance—the common man is greatly attached to his groats of buckwheat, which forms an important country-article, even in the Netherlands. In the South it becomes rarer and rarer, and disappears altogether in the Mediterranean countries; but in the wilder Austrian and Tyrolese Alps, where maize will not ripen, one often meets in autumn with the pretty fields full of the red stems and white blossom of the buckwheat. It is there called *plent* (from *polenta*), and the dish made of it *sterz*.

During the above contemplation of many of the single cultivated plants of Asia—the citron and orange, the date-palm, saffron, millet, *ceratonia siliqua*, etc.—it has often been remarked that, although their migrations may have already taken place in ancient times, they first became a lasting acquisition of the Mediterranean coasts through the *Arabs*. The Arabs energetically took up the work of antiquity, and gave a new and mighty impulse to its movement. There was a time when that Midland sea might have been called an Arabian lake. It is true that this warlike nation did not succeed in taking Constantinople, though such an event perhaps would not have been disadvantageous to that decayed capital; and to settle on the Loire, in cold Central Europe, was against their nature, and could not have lasted long, whatever had been the result of their battle with Charles Martel. But Arabs ruled in Egypt and the whole of North Africa, in Spain, Sardinia, and the Baleares, in Sicily, Apulia, Calabria, and on the coasts of the Levant. There they cultivated the land and loaded ships, and in a time of general barbarism, arts and polished manners flourished at the brilliant courts of the caliphs and their viceroys. Nay, the impulse to transplant the vegetation of Asia into Europe was deeper and of more extended influence than it ever was under the Romans, whose dominion had reached the heart of Asia too. Through the Arabs the Mediterranean countries saw Indian products alive and growing, of which the fag-end of antiquity had barely heard, or which it had received as costly wares at the hands of commerce. It is true it was impossible to transplant the pepper shrub, and nothing was yet heard of coffee; but the Silkworm was naturalized in Spain and Sicily, and Moorish silks from Palermo furnished splendid coronation-robes for the imperial Lord of Christendom; Papyrus thickets rustled on the borders of still waters, and Cotton and the Sugar-cane tried to thrive in warm places on European soil—the last a circumstance of incalculable importance. For, though the cultivation of sugar and cotton could not be carried on to any extent in Europe itself, it became the occasion of the immense production of those *East* Indian plants in the *West* Indies, of the corresponding consumption among all the nations of the earth, and of

the world-trade that connects the two, and fills the oceans and all seaports with busy life. Whoever now issues from the gate of buried Pompeii—on whose roofless walls are seen hastily sketched landscapes bearing witness to the successful appropriation of so many sub-tropical trees even in ancient times—can realize by the cotton-fields that lie before him, how the Moorish epoch rivals antiquity in this respect. This is proved not only by the names *zucchero* and *cotone*, but by others derived from the Arabic, or introduced by the Arabs, such as *melia azedarakh*, a tree which is propagated on all the coasts of the Mediterranean, the *lazzeruolo* or Azerolia-tree, with edible fruits, and the *gesmino*, *gelsomino*, the true jasmine, which has almost run wild in the above-named region (note 91).

THE TULIP.

When the Arabs fell asunder, and gradually went down, the maritime commerce of the Italian cities had meanwhile shot up during the period of the Crusades: Venice and Genoa ruled the markets of the Levant, and conquered islands and territories. This connexion with Asia helped to bring into Europe a part of the wealth of those favoured Eastern regions; and when the *Turks* pressed forward as conquerors, even that turned out to the profit of universal cultivation. For the Turks were not a merely destructive nation like the Mongols; they provided Europe with much that was new and unheard-of from the treasures of their native home, which enlarged the limits of custom and the circle of ideas. They were lovers of trees, and especially of *flowers*. During the short fierce summers of Turkestan, innumerable flowers of gorgeous hue bloom on dry heaths, which are exposed almost uninterruptedly to the rays of the sun; and the Turk, even after his migration to the South-West, desired to see his favourites in his garden, and added to them other plants unknown before from the many lands united under his dominion. Thus Stamboul and the Turkish Empire in general became the storehouse of a new and splendid garden-flora, which migrated to Europe by two main roads, those of Vienna and Venice. Of these Turkish flowers the most celebrated, and most remarkable on account of its further destinies, was the *tulipano*, so named in Italy after the Persian *dulbend*, *turban;* the wonder and admiration of the then still very naïve children of the West. The history of this gay, showy, and most variable bulbous plant has been told by J. Beckmann with his usual thoroughness in his "Beiträge." Conrad Gesner, the Linnæus of the sixteenth century, saw his first tulip in

the garden of an Augsburg patrician in 1559; and we also hear of tulips blooming in the garden of the rich Fugger family in 1565. The seed of the first-named plant came, some say, from Constantinople, others from Cappadocia; according to Clusius, Kaffa in the Crimea was its home; that is, the Crimean Tartars, kinsmen of the Turks, having brought the plant with them and propagated it, supplied the bulbs; while the Italians independently imported another kind, and called it *tulipano*. The Imperial Ambassador Busbeck, who occupied himself much with this flower, is said to have brought the first German tulip to Prague. From Vienna the tulip reached Northern Europe, and especially England; but the flower found its most ardent lovers among the free, rich, and unimaginative Dutch. In Holland there sprang up a rivalry in producing new, rare, and curious varieties, which finally led to the famous tulip-swindle in the first half of the seventeenth century, the buying and selling of samples that had never existed, a bubble-trade that was the model of the scenes enacted on the Paris Exchange a century later, and of modern speculations. History does not say whether it was even then speculative Children of Israel that paid the price of a house or estate for a fancy-tulip, and whether they were in the end the only winners, while all the other gamesters found their imagined riches melting away in their hand. Other flowers and ornamental plants that Europe owes to the Crescent are the now universally propagated, sweet-scented lilac, *Syringa vulgaris*, Ital. and Span. *lilac*, French *lilas* (an Oriental name), which Busbequius brought from Stamboul; the *Hibiscus Syriacus* with its splendid rose-like flowers; the aromatic Oriental hyacinth, *Hyacinthus Orientalis*, brought from Bagdad and Aleppo to Venice and Italy, which afterwards became a rival to the tulip in Dutch gardens, and like it was produced in innumerable colours and varieties; the crown-imperial, *Fritillaria imperialis*, a Persian flower with which Europeans became acquainted in the gardens of Constantinople; the garden-ranunculus, *Ranunculus Asiaticus*, the favourite flower of Mohammed the Fourth, who collected every variety of it, from all the provinces of his wide realm, in the gardens of his capital, whence it spread to Italy, Germany, and the Netherlands. A passion

for flowers having been once aroused, others from different countries were added to the above, and other Turkish flowers—for instance, the beautiful balsamine, *impatiens Balsamina*, brought by the Portuguese from the East Indies in the sixteenth century, and still blooming everywhere in Italy; and the carnation or gilliflower (Ital. *garofolo*, *garofano*, French *œillet*, little eye), the *dianthus caryophyllus*, the flower of the Italian Renaissance—for at the epoch of the revival of cities and commerce, it had been found growing wild in South Italy, and art and care enticed from it an increase of scent and leaves, and all shades of colour. It is still—

Im schönen Kreis der Blätter Drang
Und Wohlgeruch das Leben lang
Und alle tausend Farben—

the favourite of the Transalpine nations, though the ancients never noticed it.—That *trees* as well as flowers were spread through the world by the Turks, is proved by the already mentioned beautiful Horse-chestnut, with its pyramidal blossoms, and early mass of foliage; the Cherry-bay, brought from Trebizond to Vienna by Clusius in the second half of the sixteenth century; and, finally, the charming, delicate, sweet-scented Albizzia Julibrissin, whose Italian name *gaggia di Costantinopoli* betrays at what point it first touched Europe.—Of cereals, we have already mentioned Buckwheat as a Turkish-Mongolian grain from Upper Asia.

AMERICA.

But what mattered these belated arrivals from the East, in comparison with the enormous exchange that began with the Discovery of America? "America," says Kohl, very finely, "emerged like a new star attached to our planet." What the tropic and temperate zones of America had to bestow was no mere supplement that had been accidentally neglected by Phœnicians, Iranians, Greeks, and Romans, but the gifts and produce of quite a new world. Then commenced the *second* great period of history, that of the connexion of both hemispheres, for the first period had only been the development of one hemisphere within itself. We are still at the beginning of this epoch, inaugurated by the great Genoese discoverer; and transplantation and acclimatization have hitherto been only accidental accompaniments of commerce and navigation. And yet every walk we take through European parks and gardens, every drive on the roads and railways, already leads us past some American plants: the *vitis Labrusca*, the so-called "wild vine" (Virginia creeper) from North America, covers columns and walls with its crimsoned autumn leaves, though it yields no grape-juice like its Eastern sister from the Caucasus and Demavend; beside it climbs the bright yellow blossom of the *Tropæolum majus;* the pyramidal poplar, *Populus dilatata*, stretches like a green colonnade, in single or double file, along our highways (a native of the Mississippi, but brought to us by way of Italy, and therefore miscalled "Lombardy poplar")—the only regular-shaped tree in the North, and therefore despised by the romantic and sentimental school; the American plane-tree, *Platanus occidentalis*, throws a thick broad shade; hedges of North American acacias, the

Robinia pseudacacia, surround the public gardens, in which the spectator finds the *Pinus Strobus*, the Weymouth pine; the *Bignonia Catalpa;* the tulip-tree, *Liriodendron tulipiferum;* the magnificent *Magnolia grandiflora*, now universally propagated south of the Alps; the sweet violet-scented *Acacia Farnesiana* from tropical America; the Australian *Eucalyptus globulus*, with which the Roman Campagna is being planted; the Japanese Ligusta-tree; the beautiful Japanese medlar, *Eriobothrya Japonica*, with its fragrant blossoms in autumn, and golden bunches of fruit in spring, which is now an important cultivated plant in South Italy and Sicily; the delicate pepper-tree, *Schinus molle;* the splendid coral-tree, *Erythrina corallodendron*, and many others. In return for wheat, cattle, and horses—Eastern gifts of incalculable worth—we have received the Turkey-cock, maize, potato, and the *Opuntian cactus*, or Indian fig, *opuntia ficus Indica*. Everybody knows what the potato is to the North—and this also came to us through Italy, as the name kartoffel (tartufo) proves; but it is not so widely understood that the Indian fig is almost as important to the waste lands and rocks of the Mediterranean as that tuber to the heaths of the North. On all the coasts of the South, from the Atlas mountains and the Sierra Morena past Etna, to the Taurus and Sinai, this bluish-green, prickly plant of South America, producing in its strange vegetation one fleshy leaf at the end of another, has covered the driest and barrenest cliffs and shelves of rock, and restored them to cultivation by humus soil. This cactus is planted in the lava fields of Etna, and the neighbourhood of Naples, to make them more quickly susceptible of cultivation; hedges of the spine-covered plant protect the fields and orchards; the leaves nourish cattle and goats, and the juicy fruit forms the nourishment and refreshment of the population during the late autumn and winter months. Beside it grows its companion and physiognomical relative, the Aloe, *Agave Americana*, with its enormous rosette of leaves, out of which springs a tall flower stalk, like a tree or chandelier; the two plants together have gone far to complete the type of the Mediterranean landscape, which had long before received its sober, quiet colouring from the East, by adding a new and perfectly

harmonious element. The potato has not become a favourite among the Southerners (note 92), like the tomato, another American fruit akin to the potato, and originally poisonous, the *Solanum Lycopersicum*, called in Italy *pomi d'oro*, which is used whenever it can be, in the Italian kitchen.

That some shade may not be wanting to the picture of interchange with the New World, we have yet to mention *Tobacco*. As the Europeans not only carried the beneficial results of three thousand years of culture to the virgin land across the Atlantic, but landed negroes and Jesuits in the South, and brandy and small-pox in the North; so we owe to America not only the potato and precious metals, and the example of republican freedom, but also the poisonous narcotic plant, which it now seems impossible to extirpate. That a barbaric custom of drawing into the mouth through a tube and again expelling the smoke of the dried leaves of a stupefying plant, of stuffing the same leaves when powdered into the nose, could ever have been adopted from the Redskins by white, yellow, and black races all over the world, and become so deeply rooted among them, is a fact that gives one much to think about. As the pauper and the criminal in Europe beg a small piece of money to buy tobacco with, so the traveller or the merchant cannot more easily win the favour of a negro in the heart of Africa, of a Samoyed, a Malay, etc., than by the gift of a handful of tobacco. Turks, Arabs, and Persians sit still and puff the smoke of this weed: a picture of their own useless, apathetic, dreamy lives (note 93). During these two centuries hundreds of millions have been spent on this nasty habit; sums, which, if accumulated, or productively laid out, might have made all the nations wealthy; and even now many a thousand acres of valuable land, which might grow wheat or wine, are planted with this species of noxious night-shade. Perhaps the coming centuries will furnish more examples of the kind. For as the Hellenes, the aristocracy of mankind, were surrounded by barbarians—by superstitious Egyptians, slavish Asiatics, drunken Thracians, and the like—so the European hitherto lives encompassed by inferior, coloured races. The traffic that is more and more tightly begirdling the earth will bring the white man into ever-closer

contact and community with those masses, and their crossing may be the parent of many a monstrous progeny. Even then the ennobling process of humanity will go on, and that immense problem too be solved; but who can tell in what long periods, through what intervals of barbarism, at the expense of what sacrifices, retrogressions, and ruins!

CONCLUSION.

In more than one respect—apart from the errors of omission which the author may have committed, and for the consequences of which he must be responsible—the above sketches bear a fragmentary and isolated character. For agriculture, horticulture, and domestic economy are only parts of a whole, a mere extract from the history of human culture which accomplishes itself in every part at once. Nevertheless the universal is mirrored back in the particular; and as cultivated plants migrated from nation to nation, from East to West, from South to North, so migrated in the same direction, and at the same time, freedom and culture in every shape. Our field-fruits and tree-fruits come from India and Persia, from Syria and Armenia; and so do our fairy tales and legends, our religious systems, all primitive inventions, and fundamental technical arts. Greece and Italy furnished us with the nourishing and useful plants with which we surround our dwellings in Central and Northern Europe; and in the same succession, those classic lands taught us nobler customs, deeper thought, ideal arts, human aims, and the higher forms of political and social fellowship. What is proved by the history of plants, would not be otherwise expressed by the history of cultivation in a wider sense. The last, also, is only a history of *intercourse*, and as the individual man can only fulfil his destiny, *i.e.*, the highest development of his powers, in society, so nations, in proportion as they rise in culture, are but the pupils and heirs of other and superior nations that live round them. Therefore at all times the greatest patriotism has been exhibited, not by those national leaders who clung the most obstinately to native peculiarities, but by those who the most frankly and readily accepted foreign

teachings, and conquests of culture achieved in other lands and earlier times.

This book contains a number of monographic sketches of the manner in which plants and domestic animals passed from hand to hand; it would be another task, completing the first, to ascertain which of its *own wild native plants* the West has reclaimed and improved in the same way, whether spontaneously or following the example of the East and South. A few instances of it have been pointed out in passing, the rest must be left for a separate examination. Thus, no doubt, the cabbage, now one of the commonest and most useful of vegetables, grows, or did grow, wild in Europe; but when and where did men begin to plant it in gardens, to transform it and make it more agreeable, and to produce countless varieties, each finer and better liked than the preceding, and farther removed from the parent type? Much relating to this is scattered in an immeasurable literature; much must remain obscure; something is taught by the names now in use, or which were formerly common. Where the Savoy and Wirsing (crisped cabbage) came from is indicated in these names, for the last is simply the green cabbage, *verza*, of Upper Italy. That Italy first taught the Germans to plant and eat any cabbage at all is shown by the name "kohl," from Latin *caulis;* also by "kabes," Slavic *kapus*, *kapusta*, from *caputium* and *capuccio.* The rape-cole, "kohl-rabi," and rape-seed, "raps, rübsen," are named after the Latin *caulorapa*, *caulis rapi*, and *rapicium*, and are of recent date in Germany; the delicate and curiously shaped cauliflower is of Eastern origin, and came to Europe *viâ* Venice and Antwerp, to Germany only just before the Thirty Years' War; *Sauer-kraut* seems to be a Tartar invention adopted by the Slavs, which spread from these to Germany. Like the cabbage, the artichoke was a native of Europe, and is an improved thistle; the turnip and carrot, *daucus carota*, are also European plants. Though the apple-tree may have originally grown wild in our woods, the noble fruit-trees of our gardens are not directly its descendants, but are derived from slips brought from beyond the Alps and grafted on the native tree—an emblem of many similar and now obscure titles of possession in the intellectual province (note

94). On the whole, there is but little of what Europe naturally possessed, that she has spontaneously raised from a wild condition and made useful by cultivation; she had to be prompted to it, on the Mediterranean coasts by Asia, and in Central Europe by the South, where all the sources of our culture lie.

For centuries, nay, for thousands of years, the cultivated plants have lived with mankind under artificial conditions; it remains to be asked, How far their nature has been altered thereby? Man, by partial choice, and calculating care, produces an accumulation of certain organic tendencies and aberrations; thence proceed varieties, which in turn produce others; when the intermediate links have been dropt, as less susceptible of culture, we are puzzled to recognise in the garden-plant the wilding from which it was derived. This is a subject which now considerably occupies the naturalist and in its treatment it would be of use to him to have a wider acquaintance with the history, language, and literature of the ancients, of their pictorial and sculptural remains, etc. The question seems of still more significance when applied to domestic animals. But as this part of our subject, since Darwin, has become the daily theme of naturalists, we will limit ourselves to the following remarks on the connexion of the physiological problem with the history of man.

It is, we think, an indisputable fact that not only native but individually acquired characteristics are inheritable; in other words, that the fates and experiences of earlier generations become, in later generations, fixed natural tendencies. What the forefathers had once *learned*, often against their will, appears innate in their progeny; and what was there a result is here a point of departure. And the *longer* any condition prevailed among the parents by force of circumstances, the more certainly it appears as an instinct in the grandchildren. Mental movements produce bodily changes; and while the latter are transmitted to the progeny, they of necessity reproduce the former, which are then forthcoming as intellectual tendency, born endowment, racial characteristic, and innate skill. What we call history is nothing but this slow physico-mental transformation of the younger generations through the impressions received by elder ones; and

the so-called Spirit of the Age is nothing but a general sense, working unconsciously in the children, of the experiences endured by their ancestors. If—on occasion of some sudden and seemingly unaccountable new historical epoch, whose unexpected outbreak and wealth of ideas surprise us—we could survey the quiet preparation that has been going on in the generations immediately preceding, all wonder would cease. Because of the slowness of physiological metamorphosis, a sudden leap has at no time and in no nation been possible. Should a race be suddenly plunged, by a historical "constellation," amidst a civilization of which their earlier fortunes have not rendered them capable, there inevitably ensues a chaos of superficial culture, relapses, incongruous impulses, barbaric subtlety, coarseness, and decay; until, after centuries of a stormy process, everything at last finds its equilibrium. This was, for example, the case with the Germans on Roman soil: they, who had scarcely yet adopted the beginnings of agriculture, were obliged to live in walled towns, to submit to a system of law adjusted to the most complicated relations of life and the most refined necessities, and to feel at home in the subtle distinctions of church dogma and the symbolic old Oriental pomp of ritual! While before they had delighted for a thousand years in warlike marches, and been contented in the silence of their forests with an entirely primitive worship of nature, not exclusive of cruel sacrifices, another thousand years of a new life was necessary before new nerves, muscle-fibres, brain-fibres, and differently constituted blood-atoms, and, with these, other mental emotions, could take the place of the bodily conformation of that first period, and the inclinations rooted therein.

Therefore we cannot sufficiently estimate the slowness and difficulty of the transition from a wandering hunter's-life to the taming and tending of cattle, nor of that from nomadic freedom to a settled domicile. Necessity must have been very pressing before the Shepherd could resolve to dig up his pasture-land, to sow grain, to wait for its growing, to hoard up the harvest for a whole year, and so tie himself down to one spot like a prisoner and a slave. As soon as the outward pressure was removed, he obeyed the voice within, and returned, like a liberated captive, to his former

roving life. In the same way the Hunter felt cattle-breeding a kind of slavery. Armed with bow and arrow, his ashen shaft tipt with the sharpened stone, he freely roamed the woods, and the preparation of those weapons was his only care and occupation. If he had the luck to kill a wild bull, he could feast for days together. What a series of tiresome, hampering, humdrum arrangements would be necessary to catch that same bull or wild-cow, shut it up, accustom it to obey and follow, bring up the calf, watch the herd at the pasture, and persuade the cow to let herself be milked! Before all this would be submitted to, hunting must have become unprofitable, and escape in any direction impossible. And the moment a refuge presented itself, a relapse into the free life was inevitable (note 95). But the longer the new life was forcibly maintained, the more it became natural; in the grandchildren's grandchildren the old instinct of freedom began to decline, and a feeling for civilization took root.

That all this is not mere fancy, but really happened, and is happening still, can be distinctly observed in animals. In them also the Experience of ancestors becomes Instinct in the progeny. Grazing cattle will not touch plants that would be deadly or hurtful to them; but if taken to a distant land, to another continent where unknown herbs grow, they are unable to distinguish, they sicken or die of the poison they have eaten. Birds have an instinctive dread of the bird of prey that pursues them, because former generations have been persecuted by the same enemy, and some individuals have escaped it. Where man makes war upon birds, they are extremely shy of him; but where from any cause he spares them, they are familiar and bold, even without individual experience, and without the example of parents. Dogs that for ages have been trained to a particular kind of chase are born with a decided bent for just *that* chase; young sheep-dogs, whose forefathers have been used to watching flocks for centuries, bring into the world with them an unmistakable aptitude and inclination for the office of guardian. Where oxen have not been used as draught-cattle, it is a hard matter to yoke the young, and the reverse in the contrary case. So cows, whose female ancestors have not been milked, are very difficult to keep still

at milking-time. We have already seen that the domestic pigeon became so entirely tame, because it had been for centuries a sacred bird whom no one molested; the cock, because it was dedicated to the God of Day by the Persians, British Celts, Slavs, Hungarians, etc.; and the cat, because Egyptian superstition, combined with Egyptian patience, had for long periods spared and cherished that shy beast of prey. The summed-up experiences of all the single individuals became at last a change of nature.

The application of all this to man follows naturally. In him also the process of humanizing is a slow work of time, and here too the success is only sure when the same favourable influences have been long at work. A thousand years of slavery, for instance, are not to be wiped out by one Act of Emancipation; a race accustomed to other conditions of life cannot be made a member of the civilized family overnight by the promulgation of European laws. The greater the original difference, the longer must be the necessary series of generations, and the quiet work of change—so long that one is often inclined to doubt the possibility of the task being accomplished. To introduce the *code Napoléon* among some barbarous or semi-barbarous race, to give the soldiers European uniforms and drill-sergeants, to lay down gas-pipes, run a railway through the country, and set European officials to superintend them, to forward diplomatic notes in French, written by a European secretary behind the scenes—all this is as easy as putting any other varnish on, but only the crude, vague notions of the crowd will consider it any great gain. More likely, as it disturbs quiet growth from within and from below, the only result would be everlasting impotence.

We have seen how the flora of the Italian peninsula has in the course of history acquired more and more of the southern character. When the first Greeks landed in South Italy, the woods still consisted mainly of deciduous trees; the beeches grew at a lower level than now, when they are confined to the highest mountain regions. Some centuries later we see in the landscapes of the Pompeian frescoes nothing but evergreen trees, the *laurus nobilis*, the olive, cypress, and oleander; under the

latest emperors, and in the Middle Ages, the lemon and orange trees make their appearance; and after the discovery of America the magnolia, agave, and Indian fig. There can be no doubt that this transformation was chiefly brought about by the hand of man; but did not—in countries like the South European peninsulas, where two types of vegetation, the subtropical and evergreen, and that of the temperate zone, met together—did not the tendency and impulse of Nature itself assist the efforts of man? Did not those more southern plants, with leathery leaves, strong bark, and manifold armour, win the victory in the struggle for existence by their tougher vitality, *i.e.*, did they not gradually press forward to where, first the Apennines, and then the Alps, form a rampart against the present flora of the Mediterranean? Germany, France, and England have also considerably changed in a southern sense within historic times; but the two or three thousand years over which our historical knowledge extends furnish no evidence of a reverse process, namely, that northern cultivated plants have ever crossed the mountains, and spread over Northern and then over Southern Italy. Is it not just the same with Man, and does not the dark-haired always conquer the blonde? Does it not lie in the nature of the latter to approximate the former? We have no direct means of knowing what was the complexion of the primitive Indo-Germanic people. At the epoch when we become acquainted with it, it has long been split into branches, the colour of whose hair, skin, and eyes shows two different types. Asiatics, Greeks, and Romans are dark, Celts and Germans fair-haired, blue-eyed, and of light complexion; the former are at the same time of shorter, slighter build, with lively gestures, expert, sagacious, brown dwarfs, the Celts and Germans tall, red-cheeked giants, with flowing hair (note 96). Fair hair seemed to the Greek, as it does now to the southerner, particularly beautiful and noble, and he loved to bestow it on his ideal heroes and goddesses. In Eastern Europe, north of Greece, the scene of an early mixture of nations, we do now and then find a blonde or reddish complexion dwelt upon, but nothing like so decidedly as in the West. Herodotus describes the Budini as fair, but rather by way of distinction from the other tribes. Later, Procopius

speaks of the Slavs as neither dark nor fair, but inclining to a light complexion; while Ammianus gives the Iranian Alani moderately fair hair. The hair of the Thracians and Scythians was distinguished from that of the Greeks by a lighter hue, and this accounts for their being sometimes expressly described as white, ruddy, and soft haired, but in most cases their essential similarity to the Greeks is tacitly taken for granted. On the other hand, the Egyptians are considered particularly dark, and also woolly-haired, therefore approaching to the negro type; likewise the Colchians (pre-Semitic aborigines);—so that we have to imagine the Greeks themselves as of a warm southern tint, but by no means very black. But in which of these two types, the dark or the light, may we with the greater probability recognise a faithful copy of the primitive time? Everything is in favour of the presumption, that that race which in its historic isolation had departed least from the original manner of life, namely, the northern race, had also most faithfully preserved the physical signs of the parent type. Wherever, in later times, they have approached the southern nature and form of life, or mixed with the darker race, there the latter have always gained the upper hand. The Gauls of the later Roman period are already less fair than the Germans; so that they have to dye themselves to be able to represent German captives in Caligula's triumphal procession; while their kinsmen in the British Islands, the Caledonians, are still so red-haired and long-limbed, that Tacitus is inclined to class them as Germans. Through the whole of Gaul, the northern type, in contact with the Romans, passed over into the Italian type; who would recognise in the nervous, sinewy, brown, active, under-sized inhabitant of modern France, the tall, raw-boned Albino nature of the ancient Celts, who, as Cæsar remarks, despised the Roman for his small size? The inhabitants of South Germany, *i.e.*, the districts along the Alpine slopes, the Danube, the Upper Rhine, and even the Maine, etc., have at least chestnut coloured hair, and are akin to the Romance type; in North Germany, on the North Sea and Baltic, it is far from being everybody that resembles now the picture drawn of them by the Romans. Goethe, whom we like to think of as the *archegetes* of

his nation, had brown eyes and brown hair, and his copy, Wilhelm Meister, was not fair; Dorothea, the beloved of Herrmann, had black eyes—it is true she came from the borders of France. In mixed marriages, as those of Jews or Greeks with Germans, we see in the habitus of the progeny the greater energy of the southern complexion, the lesser power of resistance of the northern. No wonder that so little of the Goths, Longobards, etc., in Italy, of the Franks, Burgundians, and Visigoths in France and Spain, is now to be seen in the external appearance of men. The Wallachians, an outcome of the most confused mixture of north and south, are a very dark-haired, brown-coloured race. Whether in these, as in many other cases that we have overlooked, it is more the food, therefore the assimilation of matter, or the more civilized customs, or, lastly, the mixing of races, that has caused this change of complexion—in any case, the process is analogous to that other, by which, from the most ancient times, partly by natural ways, but mainly and indisputably by that of human culture, the vegetable forms of the South-east pressed forward into the West and North, and there created a different, an evergreen, more ideal landscape, and gave to the groups and figures in human settlements other, brighter, distincter, and purer outlines.

NOTES.

NOTE 1, PAGE 31.

THE Yew (*taxus baccata*) was already shunned as poisonous in ancient times, and was believed to be a demonic tree dedicated to the gods of death. Catuvolcus, a king of the Eburones, being in a desperate condition, killed himself with *taxus* poison. During the Middle Ages the yew was planted in graveyards, and as the tree is also distinguished by an extraordinarily long life, splendid examples are still to be met with in such places, especially in England and Ireland. Cæsar, in speaking of Catuvolcus, says that the yew was very abundant in Central Europe; but the beauty of its wood, which was as valuable to turners and carvers as box became afterwards, led to whole districts being stript of it. In ancient times it was used for making bows so exclusively that, for example, its Old Norse name *îr, yr*, also means a bow (just as Homer's *melia*, an ash, is also a lance); and the *Y*-rune has the shape of a bow. So the Greek *toxon*, a bow, is nearly related to the Latin *taxus* and Slav. *tisŭ*, the yew; and these words fall into their places in the large word-family, No. 235 in Curtius. *Taxus* was the material for the wood-carver, as the Gothic *thaho, argilla*, for the moulder in clay; and each might have been called *Tychios* as well as he who in the Iliad makes Ajax's shield of seven ox hides; or even *Teukros*, who, though not a master-workman, always hits upon the right thing.—Another interesting name for the yew runs through the series of nations from West to East, but so that it gradually dies out in the latter direction with the tree itself. Old Ir. *éo* (=*ivus*, as *béo*=*vivus*), Cymr. *yw*, Corn. *hiven*, Bret. *ivin*—in extended form Old Ir. *ibhar, ibar, yubar*, which last still means both yew and bow, and, according to Zeuss, is the root of the tribe-name Eburones—Span. and Port. *iva*, Fr. *if*, Mid.-Lat. *ivus*, Old High Germ. *îva, îga*, A. S. *îw, ëów*, Engl. *yew*, Dan. *ibe*, Swed. *id*, Old Pruss. *invis*, yew; but Lith. *yêva* and Lett. *eva*, lazy-tree, Slav. *iva*, willow. In Lithuanian

the yew is called *ēglus* or *oglus*, which is like the Slav. *yelĭ, yĕla*, fir. In the homeland of the Slavs, between the sources of the Dnieper and Volga, the taxus tree grew no longer (nor the beech, and for the same reason the Finns have formed their *tammi*, oak, out of the Slav. *dabŭ*, oak, or the German *timbr*) ; and so in their language the names *iva* and *tisŭ*, *tisa*, etc., have come to mean the sallow and pine. But commerce very early conveyed yew-wood, and buckets, bows, etc., of yew from the Rhine country to the Baltic, where the tree was scarcer, and thence to the Aists (Esths) and Wends, where it altogether ceased.—That horn-bows were used as well as those of yew, we have evidence from early antiquity and the distant East. In the Odyssey Ulysses turns his bow about to see if during his long absence the worms have not bored through the horn ; and in the Iliad Pandarus the Trojan possesses a bow which the *keraoxoos tektôn* has made for him out of the horns of a wild goat. The Hungarians, on their appearance in the West, are also described as being armed with horn-bows ; sitting on their swift steeds and gnashing their teeth, they shot from these bows their well-aimed and poisoned arrows. In the *Nibelungen-Lied* one of Etzel's men is significantly called *Hornboge*, horn-bow.

NOTE 2, PAGE 31.

To this very day the carts of the Nogais, the so-called *arbas*, give us a picture of these ancient waggons. The wheels and axle turn together, and as they are never greased, they cause a frightful screeching that is heard far over the steppes. The Nogais are proud of this noise and say, "We are no thieves; we can be heard from afar" (J. von Blaramberg, *Erinnerungen*, vol. i. p. 101. Berlin, 1872). Similar waggons, whose ancient origin is evident, exist elsewhere. When the Austrians marched into Bosnia in the autumn of 1878 an eye-witness wrote: "No Bosnian peasant has a cart in which even an ounce of iron is to be found. Wheels, axles, nails, are all of wood. A tire or clamp is a thing unknown ; a Bosnian waggon with six horses makes a screeching that goes through one half a mile away. It has never entered a Bosnian's head to grease a cart-wheel." It is certain that the waggons of the Cimbri at Verona in the year 101 B.C. exactly resembled these Bosnian carts.

NOTE 3, PAGE 31.

The sheep has been a domestic animal from time immemorial, but the art of *shearing* it was unknown to primitive nations ; the wool was plucked out by hand. Even in our nineteenth century C. J.

Graba found this custom practised in the distant Faroe Isles ("Journal of a Voyage to Faroe in 1828." Hamburg, 1830). After circumstantially describing the process, the author continues: "It looks more cruel than it really is, for only the wool that is near falling of its own accord is torn off; the rest is left and taken a fortnight later." In Italy this plucking of wool was still practised in some places as late as the date of Varro and Pliny. Pliny, 8, 73: "Oves non ubique tondentur, durat quibusdam in locis *vellendi* mos;" according to Varro, *De r. r.*, 2, 11, 9, those who stuck to the older method kept the animals fasting for three days, so that the wool might come out more easily. Varro can even fix the date when the first shearers (and shears, of course) came from Sicily to Italy, 2, 11, 10: "*Omnino tonsores in Italia primum venisse ex Sicilia dicunt post R. c. a. CCCCLIIII, ut scriptum in publico Ardeæ in literis extat, eosque adduxisse P. Ticinium Menam.*" They came from Sicily; that is, in this case also, Greeks were the teachers. From a passage on the subject in Homer it may appear doubtful whether in the epic period sheep were shorn, or the wool was still plucked out. Iliad, 12, 451:

ὡς δ' ὅτε ποιμὴν ῥεῖα φέρει πόκον ἄρσενος οἰὸς,
Χειρὶ λαβὼν ἑτέρῃ, ὀλίγον δέ μιν ἄχθος ἐπείγει.

That is, Hector lifted the heavy stone as easily as the shepherd—either the sheared fleece or the bundle of plucked-out wool. But the word πόκος is in favour of the latter meaning. Πόκος, as well as the verb πείκειν in Hesiod, *Op. et D.*, 775, ὁἰς πείκειν, and in Theocritus, 5, 98:

ἀλλ' ἐγὼ ἐς χλαῖναν μαλακὸν πόκον, ὀππόκα πεξῶ
τὰν οἶν τὰν πελλάν, κρατιδᾷ δωρήσομαι αὐτός—

is the specific expression for *carpere lanam*, in contrast to κείρειν, καρῆναι, to shear, to cut off. In the Odyssey, 18, 314, Ulysses calls to the maids: "Go into the house to your mistress and entertain her; sit by her and turn the spindle or pluck the wool with your hands: ἢ εἴρια πείκετε χερσίν—pulling and plucking is very similar to combing (πέκτειν, *pectere*, *pecten*), which has nothing to do with shearing. This primitive meaning of πέκειν is well confirmed by the identical Lithuanian verb, *pészti* (*sz*=*k*), which still means to pull, to tear. In the same way the Slavic *runo*, fleece, is formed from *rŭvati*, to pluck. Varro, who frequently recurs to the subject, thinks it indubitable that *vellus*, fleece, was also derived from *vellere*, to pluck. Modern expositors, like Corssen, separate the two words, connecting *vellus* with ἔριον, οὖλος, and *vellere* with the Gothic *vilvan*, to rob (properly rend). Varro, *De l. l.*, 5, 8, also quotes the opinion that the *Velia*, the next hill

to the Palatine, was called so from the Palatine shepherds plucking the wool off their sheep in that place; from which we at least gather that those earliest shepherds were not thought to have used the shears. —It was the case with sheep's wool as with the human hair in time of mourning. To *tear out* the hair when in affliction was natural to the passionate gestures of the South and of antiquity; and Homer, in such cases, uses the verb τίλλειν, τίλλεσθαι, which expresses the action of tearing out. In later times, when a man's hair was no longer his pride, and mourners *shaved* their heads and beards, the custom was a mere form; and so, in other parts of the epic and in later poetical speech, another word, κείρειν, κείρεσθαι, is used.—We do not know exactly how early the custom of shearing was practised in the East; at any rate, it was earlier than in Greece. As "the sheep-shearing" is spoken of as a country feast in the oldest portions of the Bible, modern commentators have supposed that a general shearing took place at a fixed time. But there is not much force in the argument. It must be remembered that the flocks of the patriarchs were not kept merely or mainly for the sake of the wool; that the sheep, besides the use of their milk, were principally destined to be killed and eaten, and their skins to be used for clothing and bedding.

NOTE 4, PAGE 31.

See Hehn's treatise, *Das Salz. Eine Kulturhistorische Studie*, Berlin, 1873. Still more copious is the book by M. J. Schleiden, *Das Salz. Seine Geschichte, seine Symbolik und seine Bedeutung im Menschenleben. Eine Monographische Skizze*, Leipzig, 1875, which attempts to handle the subject from all points of view. This opportunity is used to add a few notes to the first-mentioned study.

According to an essay by R. Ludwig, in the *Archiv für Hessische Geschichte und Alterthumskunde*, vol. xi. p. 46 *seq.*, Darmstadt, 1867, the bathing-place Nauheim, between Frankfort and Giessen, was an old Celtic salt mine. In that place, besides Celtic coins and bronze vessels, there have been found earthenware vessels for making salt. To what Celtic nation did this salt-pit belong? Perhaps to the Boii, for though Helvetians of the early time may have dwelt near the Main, they can hardly have crossed that river. Or was there here, in the Germanic land, a salt work carried on by Celts under compulsion or for hire? To refer the name of the Ἅλαννοί used by Ptolemy to the Celtic word *haloin*, as we have done in agreement with Zeuss, is hazardous, because the change of *s* into *h* is only found sporadically in early times, and first becomes general towards the end of the Roman Empire. But in the name of the Celtic *Salassi*, who dwelt in

the highest Alps, there may well be contained the idea of salt, in which case the account of these people by Appian, *Illyr.*, 17, would contain a legendary motive that had some sort of connection with the name. We are told that they had been obliged to submit to the Romans because they had no salt. Afterwards, when they revolted, they stored up a quantity of salt in their mountains for purposes of defence. My conjecture on page 49 of the treatise on salt, about the origin of the name Heilsbronn, has been refuted in *Zeitschrift für deutsches Alterthum, Neue Folge*, vol. vi. p. 153 *seq.*—The salt-pit of Salzungen on the Werra is already mentioned in a diploma of Charlemagne, year 775 (Wenck, *Hessische Landesgeschichte*, vol. iii., *Urkunden*, book No. 5): "*Ad Salsunga super fluvium Uuisera . . . ubi patellas ad sale facere ponuntur.*"—The river Halys (first mentioned by Herodotus, and named, according to Strabo, 12, 3, 12, from the salt springs past which it flowed) owes the Greek form of its name to the Hellenic colonists on the Pontic coast. If in the Armenian *agh*, salt, the *gh* is equal to *l*, and the *s*, after the Iranic and Greek manner, has passed into an aspirate, and then entirely disappeared, it would prove that the Armenian language, which already leans to Europe, possessed the European word *sal*, and that possibly the name of the river was originally a Phrygio-Armenian one.—*Harinc, herinc*, herring, is very aptly explained by Müllenhof, from the German, as meaning *heer*-fisch, fish that come in hosts (V. Rose, in the *Hermes*, viii. p. 226, 1874). With this a part of the difficulty ceases, but there remains the Old Norse *sîld*, Lith. *silke*, Slav. *seldĭ*, which can only mean the salt-fish. And we do not yet see how the problem of *Saale* =salt-river, *Hall*=salt-pit, can be explained, except by supposing the latter to be a Celtic form of the word.

NOTE 5, PAGE 32.

These subterranean dwellings are found in the most different regions: they are the οἶκοι ὕπαντροι καὶ κατάσκιοι of the Sacæ in Ælian; the οἰκίαι κατάγειοι of the Armenians described by Xenophon; the *demersae in humum sedes* and *specus aut subfossa* of the Satarchs in Mela; the *defossi specus* of the Scythians; the *subterranei specus* of the Germans, which were covered with dung to keep out the cold, Old High Germ. and Mid. High Germ. *tunc*, whence is derived the German *Dung, Dünger*, dung, *screona* in the Lex Salica, Old French *escregne*, etc. (see Wackernagel in Binding's *Geschichte des burgundisch-romanischen Königreichs*, i. p. 333, who thinks the word German, and connects it with the A. Saxon *scræf*, antrum). Greek expressions for such caves are γύπη, γυπάριον (used by Hesychius and Suidas, Aristoph., *Equ.*,

790, Old Slav. *zupiste*, *zupiliste*=cumulus, sepulcrum, Pol. *zupa*=salis fodina), φωλεός, τά φωλεά (also in the form γωλεός), τρώγλη, whence the name of the Troglodytes on the Arabian Gulf, in the Caucasus, etc. Gradually the sod-roof rose higher, and the cave under the house served only for a winter-dwelling and for women. But the ancient custom is preserved here and there to the present day, and a stranger approaching such a village thinks the slightly elevated roofs are natural risings in the ground. In Russia, wherever any earthworks are undertaken, for example, in making a railway, the first thing done is to form such caves: a funnel-shaped hole, steps on one side, and some logs above covered with turf, and the dwelling is complete. The huts of the Wallachian peasants, the so-called *bordeitz*, have a slanting entrance; in the interior there is sometimes, but rarely, a window, which is pasted over with paper and lets in very little light. Towards the end of autumn all cracks are stopped up, doors of hurdle-work are fixed, and underground stables dug (see the instructive book by C. Allard, *La Bulgarie Orientale*, Paris, 1864). The want of air makes these troglodyte dwellings insufferable; the stench and suffocating atmosphere sometimes drives even the seasoned inhabitants out into the winter cold. Then there is the plague of fleas, of which all travellers here and throughout Siberia complain. The fleas absolutely force the natives to sleep out of doors whenever the season allows, which is the principal cause of the frequent ague. The insects cover the subterranean wall so thickly that it seems black. In primitive times, and more to the north, where the winters are long (for example, in Scandinavia before it was reached by Southern culture), the same conditions must have prevailed in as great or a higher degree, and whoever wishes to realize those times, will do well not to forget this feature of the picture. And here let us call to mind another boon of civilization. Travellers in Siberia, from Pallas and Humboldt down to the latest, are unanimous in their descriptions of the torments endured in summer from gnats, midges, spiders, gadflies, stinging-flies, etc., that fill the air and attack man and beast (see *Sibirische Reise*, by Middendorff, vol. iv. p. 830). It is impossible to defend one's self from these blood-suckers; there is only one means, to deprive them of their habitat by draining and cutting down the forests. In this respect Germany, before the Roman age, was exactly like Siberia (Middendorff: "There is no doubt that our forefathers in the heart of Europe were also exposed to the same torments that are now suffered by travellers in all primitive regions. . . . Send the man who doubts the benefits of culture into primitive nature among the mosquitoes. . . . The plague of mosquitoes is undoubtedly the principal cause of the migrations of deer and reindeer.") It is true

that the skin of the ancient German must have been far more impervious to the stings of insects than that of the educated modern European ; but where the skin is insensible, so are also mind and soul.

NOTE 6, PAGE 32.

That the German custom of making drinking vessels out of the skulls of slaughtered enemies was not derived from their Scythian or, later, Turkish neighbours in the East, is proved by the existence of the same custom among the Celts at a very early pre-Germanic period. The Boii in Upper Italy did the same with the head of the fallen Roman consul, Postumius (Livy, 23, 24 : "*Purgato inde capite, ut mos iis est, calvam auro caelavere, idque sacrum vas iis erat quo sollemnibus libarent, poculumque idem sacerdoti esset ac templi antistibus*") ; and Ammianus Marcell., 27, 4, in describing the primitive times of the Celtic Scordiscans in Illyria, uses the words : "*Humanum sanguinem in ossibus capitum cavis bibentes avidius.*"

NOTE 7, PAGE 32.

The custom of getting rid of old people was prevalent among the Teutons of Germany and Scandinavia, among the Wends, Lithuanians, and Romans (see Grimm, RA., chapter 4, at the end of the 1st volume). The same is related of Iranian nations : of the Bactrians (Strabo, 11, 11, 3), the Caspians (11, 11, 8), the Massagetæ (11, 8, 6), etc. Old age is unbearable, and even the gods hate it (*Hymn to Ven.*, 247 :

οὐλόμενον, καματηρὸν, ὅ τε στυγέουσι θεοί περ).

The aged man himself wishes that he were dead, and begs his family to kill him. People in a state of nature, like the peasantry now, are not sentimental, they are indifferent to the death of a relation, or to the thought of their own. What Herodotus, 5, 4, tells of a Thracian people, the Trausians, that they pitied the new-born child because the sufferings of life awaited him, and praised his death as a release, what Theognis says v. 425 f., and what Euripides expresses in the celebrated passage in the Cresphontes (Nauck, *Euripidis fragmenta*, *Lipsiae*, 1869, No. 452) :

ἐχρῆν γὰρ ἡμᾶς σύλλογον ποωυμένους
τὸν φύντα θρηνεῖν εἰς ὅσ' ἔρχεται κακά.
τὸν δ'αὖ θανόντα καὶ πόνων πεπαυμένον
χαίροντας εὐφημοῦντας ἐκπέμπειν δόμων—

this is at bottom the view taken by all nations at a certain stage of awakened reflection. It is a step farther in development, to comfort one's self with the hope of a life after death, free from mortal limitations, as the Getæ did, whom Herodotus calls οἱ ἀθανατίζοντες, the immortalizers.

NOTE 8, PAGE 32.

Among all the Indo-European races we find, in the obscurity of primitive times, traces of human sacrifice and cruel burial-ceremonies; gradually disappearing, like all religious delusions, according to the stage of humanity or connection with more civilized nations. For the customs of the Greeks and Romans, we refer our reader to the copious information contained in E. von Lasaulx's *Sühnopfer der Griechen und Römer*, in the "Studien des Klassichen Alterthums," Regensburg, 1854, and to Welcker's "Griechische Götterlehre." There are many proofs of such customs having prevailed among Northern nations, lasting the longer the more they approach the north-east. When Alexander the Great marched against the Taulentians, an Illyrian people, they and their neighbours sacrificed three boys and as many girls, and three black goats, before they went to war (Arrian, 1, 5, 11). The Celtic Scordiscans sacrificed their prisoners to their barbaric gods (Amm. Marcell., 2, 7, 4: "*Scordisci, saevi quondam et truces, hostiis captivorum Bellonae litantes et Marti*"). The Galatians of Asia Minor did the same: the pro-consul Cn. Manlius, in a speech before the senate (Livy, 38, 47), says that the surrounding nations were exposed to their disastrous incursions, "*Quum vix redimendi captivos copia esset, et mactatas humanas hostias immolatosque liberos suos audirent.*" Cæsar, a century and a half later, reports of the Gauls, in Gaul proper (*De B. Gall.*, 6, 16): "*Qui sunt affecti gravioribus morbis, quique in proeliis periculisque versantur, aut pro victimis homines immolant aut se immolaturos vovent, administrisque ad ea sacrificia Druidibus utuntur, quod, pro vita hominis nisi hominis vita reddatur, non posse deorum immortalium numen placari arbitrantur, publiceque ejusdem generis habent instituta sacrificia;*" and Mela confirms this with an expression of horror (3, 2, 3): "*Gentes superbae, superstitiosae, aliquando etiam immanes adeo, ut hominem optimam et gratissimam Diis victimam caederent.*" We find the same murderous belief among the Germans, Tac., *Germ.*, 9: "*Deorum maxime Mercurium colunt, cui certis diebus humanis quoque hostiis litare fas habent:*" 39: "*Stato tempore in silvam . . . coëunt, caesoque publice homine celebrant barbari ritus horrenda primordia.*" Jorn. 5: "*Quem Martem Gothi semper asperrima placavere cultura* (*nam victimae ejus mortes fuere captorum*), *opinantes, bellorum praesulem*

apte humani sanguinis effusione placandum." Procop., *De B. Goth.*, 2, 15 : τῶν δὲ ἱερείων σφίσι τὸ κάλλιστον ἄνθρωπός ἐστιν, ὅνπερ ἂν δοριάλωτον ποιήσαντο πρῶτον· τοῦτον γὰρ τῷ Ἄρει θύουσιν, ἐπεὶ θεὸν αὐτὸν νομίζουσι μέγιστον εἶναι (οἱ Θουλῖται). When the Romans under Germanicus entered the field on which the legions of Varus had been surrounded by the barbarians, the ground was strewn with the limbs of horses, on the boughs were stuck their heads, and in the neighbouring groves the altars were still standing, on which the tribunes and centurions of higher rank had been sacrificed ; a few survivors pointed out the gallows on which the common soldiers had been hanged, and the ditches into which the corpses had been thrown, etc. (Tac., *Ann.*, 1, 61). After the furious battle between the Chatti and Hermunduri, of which Tacitus speaks in *Ann.*, 13, 57, and in which the Chatti were beaten, all that were taken alive were devoted to destruction, *occisioni dantur.* The prophetesses foretold future events from the movement of the victims' muscles, the splashing of their blood in the sacrificial cauldrons, and the position of their intestines. It was the same among the Cimbri (Strabo, 7, 2, 3). Among their women were holy prophetesses, bare-footed, grey-haired, and clothed in white linen mantles fastened with brooches and confined with iron girdles ; these, sword in hand, seized the prisoners in the camp, and led them, covered with the sacrificial garment, to a large iron cauldron, containing about twenty amphorae ; then they mounted the steps which led up to it, and bending over, cut the throat of each prisoner. Some prophetesses prophesied from the blood which streamed into the cauldron, while others cut open the bodies, and examining the intestines foretold a victory. Human sacrifice on a large scale was also customary among the Scandinavians. Thietmar of Merseburg relates that the Danes celebrated every nine years, in their capital city, Lethra, a great festival, at which 99 men and as many horses were slaughtered. Thietmar explains that they did this to clear themselves of all guilt before the gods of vengeance : "*Putantes, hos eisdem erga inferos servituros et commissa crimina apud eosdem placaturos.*" Probably the same meaning of a propitiatory sacrifice prevailed in the similar great festival celebrated, according to Adam of Bremen, 4, 27, by the Swedes every nine years, at Upsala. There nine heads of every male creature were offered up, the bodies were hung on trees in the neighbouring grove, and left to decay ; men and dogs hung there together. The Scholiast, 137, adds in completion, or correction : "for nine days together they sacrificed every day one man, together with other creatures, so that in nine days there were sacrificed seventy-two creatures ; this sacrifice took place in spring, when day and night are of equal length." In times of national calamity, or as an expres-

sion of special gratitude, men were sacrificed to the gods in an exceptional manner, as we are informed by old Northern legends (Grimm's "Teutonic Mythology," chapter on Worship.) So on the opposite coast of the Baltic, in Esthonia, that is, among the Prussians, Adam of Bremen (*De situ Daniae*, 224): "*Dracones adorant cum volucribus, quibus etiam vivos litant homines, quos a mercatoribus emunt, diligenter omnino probatos, ne maculam in corpore habeant.*"—As general as this religious custom was that of slaughtering women, slaves, prisoners, and horses at the funeral pile of a dead man. Achilles, in the 23rd book of the Iliad, sacrifices to the shade of Patroclus, horses, dogs, and twelve young Trojans, whom he himself had caught alive for that purpose; and on his own tomb Polyxena was sacrificed, as we read in the Ἰλίου πέρσις of Arctinus. Among the Gauls, shortly before the time of Cæsar, servants and *protégés* who had been favourites with their masters were burned with his corpse (*De B. Gall.*, 6, 19: "*Paulo supra hanc memoriam servi et clientes, quos ab iis dilectos esse constabat, justis funeribus confectis, una cremabantur*"); and relations jumped into the burning pyre in order to be united with the dead (Mela, 3, 2, 3: "*Olim . . . erant qui se in rogos suorum, velut una victuri, libenter immitterent*"). Among certain Thracian peoples, the wives of a dead man contended for the honour of being slaughtered at his grave—as Herodotus, 5, 5, relates: She that succeeds in being thus considered the most beloved, is applauded by every one, and buried with her husband; the others are despised, and bewail their lot." The same thing is reported, in a longer description by Mela, 2, 2, 4, as being a universal Thracian custom. Among the Herulians (and probably also among the neighbouring and kindred nations on the Baltic) the wife hanged herself at the grave of her husband; whoever neglected to do so would expose herself to eternal shame, and the hatred of her husband's relations (Procop., *De B. Goth.*, 2, 14). Well-known are the cruel burials of the Scythians described by Herodotus, 4, 71 and 72: "When the king is dead, one of his concubines is strangled and buried with him, as well as his cupbearer, his cook, marshal, body-servant, messenger, horses, etc.; and a year after, fifty servants, whom the king had chosen out of his subjects—for there are no bought servants—are strangled, likewise fifty of the finest horses." Among the Slavs, as is unanimously reported by St. Boniface and afterwards Thietmar, the wife was burnt with her deceased husband—Epistle of Boniface and other bishops to King Æthelbald of Mercia (between 744 and 747, Jaffé's *Monumenta Moguntina*, p. 172): "*Winedi, quod est foedissimum et deterrimum genus hominum, tam magno zelo matrimonii amorem mutuum observant, ut mulier, viro proprio mortuo, vivere recuset. Et laudabilis mulier inter illos esse*

judicatur, quae propria manu sibi mortem intulit, et in una strue pariter ardeat cum viro suo;" Thietmar of Merseburg, 8, 2, says of the Poles: "*In tempore patris sui* (that is, of the father of Boleslav Khrabry), *cum is jam gentilis esset, unaquaeque mulier post viri exequias sui igne cremati decollata subsequitur.*" The Prussians also buried horses, servants and maids, hounds, etc., with the dead—Peter of Dusburg, 3, 5 (*Scriptores rerum prussicarum*, i. p. 54): "*Unde contingebat quod cum nobilibus mortuis arma, equi,* SERVI ET ANCILLAE, *vestes, canes venatici et aves rapaces et alia quae spectant ad militem urerentur;*" and when they were converted they had to promise that they would no longer burn or bury men and horses with the dead at a funeral—Dreger Cod. Pomeran. diplom., No. 191, of the year 1249 (treaty between the Teutonic Knights and the Prussians): "*Promiserunt, quod ipsi et heredes eorum, in mortuis comburendis vel subterrandis cum equis sive hominibus, vel cum armis seu vestibus vel quibuscumque aliis preciosis rebus, vel etiam in aliis quibuscumque, ritus gentilium de cetero non servabunt.*" Gedimin, the Grand Duke of Lithuania, farther east, where heathenism and old ways lingered longest, was buried in the following manner as late as 1341, at the time of Petrarch and the commencement of the Renaissance (Stryjkowski, Kronika polska, end of book xi.): "A pyre was erected of fir-wood, and the dead man, dressed in the clothes he had liked best when living, was laid upon it, as well as his sword, spear, bow and arrows. Then, amid the lamentations of the surrounding warriors, two falcons, two hounds, a living saddled horse, and the favourite servant were burnt with the corpse. Claws of the lynx and bear were thrown into the flames, as well as a portion of the booty taken from the enemy, and finally three captive German knights were burnt alive. When the flames were extinguished, the bones and ashes of the prince, the servant, the horse, and the dogs, etc., were collected together and put into a grave at the place where the rivulets Wilna and Wilia meet, and there covered with earth." The Edda, in the third song of Sigurd the slayer of Fafnir, informs us of the funeral customs of the Scandinavian Teutons. After Sigurd is murdered, Brunhild kills herself, and while dying, gives the following directions (we follow Simrock's translation): "Burn at the side of the Lord of Hunes my henchmen adorned with costly chains, two at his head and two at his feet, also two hounds and two hawks. Thus all is evenly arranged." So much for Sigurd's following; for herself she desired: "With me shall follow him five of my maids, also eight henchmen of gentle birth, my foster-brothers grown up with me, whom Budli gave to his child."

What were the customs of the East Scandinavians, who, under the

name of Russians, invaded and subdued the East of Europe, as warriors, robbers, and rulers, we see from two notices, one by a Byzantine and the other by an Arab, both all the more important as they belong to the tenth century, and our other authorities do not reach so far back. Leo Diaconus (ed. Hase, 9, 6, p. 92): The Russians, shut up in Dorostolum under Svietoslav, engage in frequent battles with the Greeks in the open field before the walls. Once, when such a battle had taken place, in which Ikmor, the second in rank after Svietoslav, was killed, the barbarians collected the corpses by night at full moon, and burned them on funeral piles; on which also, according to ancestral custom (*κατὰ τὸν πάτριον νόμον*), most of the prisoners, men and women, were slaughtered. And they offer sacrifices to the dead (*ἐναγισμούς*), sucklings and cocks being strangled on the Danube, and then sunk in the stream. Still more explicit is the description given of a Russian burial by the Arab Ibn-Foszlan (Frähn, p. 131 *seq.*), who was an eye-witness of it in 921 or 922. A chief had died, and a girl in his service offered to die with him. The deceased was placed in a half-sitting posture on a couch in a boat; a dog was cut in two and thrown into the boat; all the dead man's weapons were laid beside him; two horses were hewn asunder and the pieces thrown into the boat, as well as two oxen, etc. The girl was strangled with a rope by the men, while at the same time an old woman called the "Angel of Death" stabbed her to the heart with a knife; after which the two corpses, with all the other things, were burnt. During the slaughter the men kept up a great clashing with their shields to drown the death-cry of the girl, which might have disinclined other girls to seek a similar reunion with their masters. Before being killed, the girl had taken off her armlets and given them to the Angel of Death (whom the Arab calls "a devil with cruel gloomy eyes"), and had presented two girls who served her, the daughters of the old murderess, with her anklets. We pass over the remaining details, which make this account one of the most precious monuments of early northern antiquity. J. Grimm (treatise on Cremation) passes it over in disgust, because it disturbs his plan; the founder of German archæology was after all a pupil of the Romantic period, and his chief design was, in contrast to the eighteenth century, to discover traces of a deep meaning in the childhood of a nation.—It would be easy to add to the above quotations, but they are sufficient to prove the universality and high antiquity of such customs. When we now dig up the stone or earth-tombs of the primitive European ages, we do not often think what cruelties, what pangs, what horrors may be linked with each atom of dust! But nothing more clearly shows the nature of those early races, and the gloomy narrowness of their spirit, than this pic-

ture of women *obliged* to rival each other in pressing forward to a fiery death, of servants immolated by the dozen, of prisoners butchered in the gloomy forest or over the great cauldron. In Gaul, murders in honour of the dead had gone out of use before the arrival of the Romans—a result of increasing civilization ; but human sacrifices to the gods had to be rooted out by strict prohibitions of the Roman emperors (Sueton. Claud. 25 : "*Druidarum religionem apud Gallos dirae immanitatis . . . penitus abolevit*"). Tacitus paints a fascinating picture of the scene at the conquest of the Isle of Mona (Anglesey), in whose sacred groves prisoners were killed, just as they were at the sanctuary of Nerthus, or in the Teutoburg forest after the defeat of Varus. The shore of the island was held by an armed multitude ; female furies, clad in the colour of death, with streaming hair, waved their torches, while the Druids lifted their arms to heaven and cried aloud —all in vain, for the Romans forced a landing and felled the sacred trees, the witnesses of centuries of bloody mysteries (*Ann.* 14, 30: "*Excisique luci, saevis superstitionibus sacri, nam cruore captivo adolere aras et hominum fibris consulere deos fas habebant*").

The fact that bloody burials ceased spontaneously in Gaul, while religious human sacrifices only yielded to force, proves how much more easily mere popular tradition melts away before the rising light than the maddest religious ordinances guarded by a priesthood. The hold of the latter upon the Germans, Lithuanians, and Wends was first loosened by Christianity ; and if we are sometimes tempted to regret the sudden break in the organic development of a *naïve* race, caused by its conversion to Semitic Christianism, we need only recall such features of heathen life to be reconciled to its immediate fall. We will also add, that every first beginning, every undertaking and foundation, demanded human blood as the warrant of its success or duration ; likewise every secret, for only death is completely dumb. When the Saxons found themselves forced to leave the west coast of Gaul and sail homeward, custom demanded that every tenth prisoner should be cruelly slaughtered before weighing anchor (Sidon. Apoll. *Ep.* 8, 6 : "*Mos est remeaturis decimum quemque per aequales et cruciarias poenas —plus ob hoc tristi, quod superstitioso, ritu—necare*"). The converted Franks marched to Italy under their king, Theudebert, to fight against the Goths under Witigis ; on the point of crossing the Po and beginning actual war, they there sacrificed what children and wives of Goths they found, and threw their corpses into the river as the first-fruits of the enterprise(Procop., *D. B. Goth.*, 2, 25 : *παῖδάς τε καὶ γυναῖκας τῶν Γότθων, οὓρπερ ἐνταῦθα εὗρον, ἱέρευόν τε καὶ αὐτῶν τὰ σώματα ἐς τὸν πόταμον ἀκροθίνια τοῦ πολέμου ἐρρίπτουν*). When a fort or bridge was built, a living person was walled up (Grimm's "Teut. Myth." p. 114–14) ;

and when a town was founded, its safety and solidity were secured by human sacrifices. When, for example, Seleucus Nicator founded Antioch on the Orontes, the high priest sacrificed a virgin (*κόρη παρθένος*) exactly between the future town and the river, and this was considered to secure the good fortune of the city (Joh. Malalas, 8, p. 256, ed. Oxon.). So, when Moscow was about to be built in 1147, the proprietor of the land, one Kutschko, was drowned in a pond; and Cracow, according to the legend of its founding related by Kadlubek, was built on the rock of the dragon slain by the two sons of Kraku, but not till *the younger brother had killed the elder*, as Romulus did Remus, etc. When a treasure is buried, when an action of the utmost secrecy is going on, of which no one must hear, all the workmen employed in it have to die. The chariot, clothes, and image of Nerthus (Mother Earth) were washed in a hidden lake, and the servants who had assisted were drowned in the same. When King Alaric suddenly died in South Italy, his Goths diverted the course of a river, buried him in its bed, then allowed the water to return and cover the grave; but lest any one should find the place, the captives who had been made to do the work were killed (Jorn., 29: "*Collecto captivorum agmine, sepulturae locum effodiunt . . . ne a quoquam quandoque locus cognosceretur, fossores omnes interemerunt*"). Long before that, Decebalus, king of the Dacians, had tried to hide his treasures from the Emperor Trajan in an exactly similar manner as Cassius Dio relates (68, 14): he turned aside the river Sargetias that flowed past his castle, buried his gold and silver in its bed, and turned the water back again; his splendid garments, which might have suffered from the damp, were hidden in a cave, and the prisoners of war, who had done the work in both cases, were killed. But it was all in vain, for, as Dio goes on to tell us, the king's confidant, Bikilis, was taken by the Romans and told them what had happened.—It was the constant care of all ancient nations to hide their treasures from the enemy, and no doubt we owe to this circumstance many an antiquarian discovery already made or awaiting us in the future.

In what has been said above, we have confined ourselves to the Indo-European nations; but that the customs described extended beyond that circle is proved by the following passage in Livy, *Epit.*, 49: "*Extant tres orationes ejus (Servii Sulpicii Galbae)—una in qua Lusitanos propter sese castra habentes caesos fatetur, quod compertum habuerit, equo atque homine suo ritu immolatis, per speciem pacis adoriri exercitum suum in animo habuisse.*" So that the Lusitanians, an Iberian nation, also sacrificed a man and a horse at the commencement of a military enterprise! And this happened between 150 and 200 B.C., earlier than any similar transaction that we know of among Celts or Germans.

To close this gloomy picture with a more cheerful trait, we will remind our readers of an occurrence that took place in modern times. When Friedrich Wilhelm, the last Elector of Hesse, died at Prague, in January, 1874, the funeral car, both at Prague and afterwards at Cassel, where he was buried, was drawn by the eight cream-coloured horses of which he had been so fond; and which, as a newspaper report asserted, were to be *shot* after performing their last service; apparently for the prince to take to the heavenly regions with him, just as the Scythian kings had their horses sent after them.

NOTE 9, PAGE 32.

Among the numerous vouchers for the ancient custom of casting lots, we will only mention here the striking occurrence which Cæsar relates towards the close of his first book. Cæsar had sent two messengers to the camp of Ariovistus to hear his proposals. One was Cæsar's friend, Gaius Valerius Procillus, a young man distinguished for virtue and culture, and acquainted with the Gallic tongue; and the other, M. Metius, who stood on the footing of guest-friendship with Ariovistus. Scarcely had that king perceived the two Romans when he cried out, "You are spies!" refused to hear them, and ordered them to be put in chains. Then came the battle which ended in the flight of the Germans; during the pursuit, Cæsar himself came up with the trebly fettered Valerius Procillus, and rescued him from the guards who were dragging him away. The liberated captive related that accident alone had saved him: three times before his very eyes the lot had been cast whether he should be burned immediately or spared for a later opportunity; three times the lot had been in his favour, and thus he had remained alive. Cæsar, as he says himself, was not more rejoiced at the battle he had won than at this stroke of good fortune, for his victory would have been dimmed if his beloved friend had remained in the hands of the barbarians. M. Metius was also found, and brought back to Cæsar.

NOTE 10, PAGE 33.

Πόλις and *populus* contain the idea of fulness, multitude. *Thiuda* (whence *thiudisk*, our *deutsch* and *Deutschland*) is also found in the Italic, Celtic, and Lithuanian languages, and comes from the root *tu*, to swell or grow. The German *leute;* Slav. *liudŭ*, a people; Old Prussian *ludis*, the master, the host, the man; Lettish *laudis*, people, folk, has its root in the Gothic verb *liudan*, to bud; the Slavic *naródŭ*, race, people, world, in *roditi*, to beget or bring forth, etc. We will not here enter into this rich theme which would lead us too far, and

will only mention the celebrated old name of *Goths*. For there is no doubt that that name is to be explained by the verb *giutan*, to pour, Greek χέω, Latin *fundo*, *fudi*. The Goths are *effusi*, *profusi*, like mankind in general; like the leaves of the forest which the wind blows down and spring causes to bud; like the swarming of fish, and the seeds of life everywhere. Jesus Sir., 14, 19: "Like the green leaves on a beautiful tree, of which some fall and others grow again; so it is with the people, some die and some are born." Homer, Il. 6, 181:

> "Like leaves on trees the race of man is found,
> Now green in youth, now *shed* (χέει) upon the ground;
> Another race the following spring supplies;
> They fall successive, and successive rise:
> So generations in their course decay;
> So flourish these, when those are past away."

"Shall I fight with thee," says Apollo (Il. 21, 535), "on account of poor mortals who owe their life and nourishment to earth; like yearly leaves that now smile on the sun, now wither on the ground?" The Ciconians (Od. 9, 55):

> "Thick as the budding leaves or rising flowers
> O'erspread the land, when spring descends in showers."

The Achæans, too, are like leaves or grains of sand (Il. 2, 800). Homer speaks of φύλλων χύσις, a *pouring* of leaves (Hesiod, *Op. et D.*, 421):

ὕλη, φύλλα δ' ἔραζε χέει.

And Pindar of the corn (Pyth. 4, 42):

ἐν τᾷ δ' ἄφθιτον νάσῳ κέχυται Λιβύας
εὐρυχόρου σπέρμα πρὶν ὥρας.

The same verb in Homer is used for crowds of men or animals, as in Il. 5, 141: of the sheep that crowd together (κέχυνται) as they fly; Il. 16, 259, of the myrmidons who *pour* forth like wasps under the leadership of Patroclus; Il. 2, 447, of the Achæans who "crowd Scamander's flowery side" (προχέοντο); Il. 15, 345, of the Trojans streaming to the fight (προχέοντο); Il. 19, 222, of the bloody harvest mown down by steel (ἔχευεν); Od. 22, 425, of the fish that flounder panting on the sands (κέχυνται), etc. In Aristotle (*Hist. anim.* 5, 9, 32), χυτοὶ ἰχθύες are swarming fish that go in shoals and are caught in nets; Hesychius has a reduplicate κοχύ, with the meaning many, sufficient; the Scholion to Theocritus, 2, 107, has an else unknown substantive κόχος, a full current. Still nearer to the Latin, Gothic, and Albanian words (Alban. *heth*, *huth*, I pour, throw), are the forms κοχυδέω, to flow abun-

dantly (in Theocritus), χύδην, abundantly, in heaps, χυδαΐζω, χυδαῖος, χυδαϊστί, χυδαιόω, χυδαιότης—all referring to what is popular, common, vulgar. That the Latin *fundo* was also used of the generative power of the earth is proved by passages like that in Lucretius, 5, 917: "*Tempore quo primum tellus animalia fudit;*" Cic., "*terra fruges fundit;*" Virg., "*fundit victum tellus, fundit humus flores,*" etc. Just so the Old Norse *gjóta* is to beget; *got* or *gota*, fetura piscium; while the meaning, "to pour," is almost lost in that dialect. So the Goths, both of Germany (*Gutos, Gutans*) and of Scandinavia (*Gautar, Gotar*), are simply those *poured out, teemed* from the bosom of the earth, the mass of living men (as the Gothic name for the world is *mana-seths*, men-seed), a name that is far more ancient than the proud compounds with which Celtic and also German nations adorned themselves in later and historic times.—In the Lithuano-Slavic languages *giutan* is altogether lost, and is replaced by Slav. *liyati, liti*, to pour; Lith. *lëti*, to pour; *letas*, pouring; *lyti*, to rain; *lytus* or *lëtus*, rain. It is not at all far-fetched to find in this word the root of the names Lithuania and Lithuanian, *Lètuva* and *Lètuvis*, as well as that of their neighbours and fellows in culture, the Goths, in *giutan*.

NOTE 11, PAGE 33.

The Greek χίλιοι, Æolic χέλλιοι, has lately been identified with the Sansk. *sahasra*, Zend. *hazanra*. If this be correct—which we leave undecided—the Greeks have borrowed their word for thousand—as *mille* and *thusundi* show—from Asia, the home of high numbers and giant periods, just as they formed their μύριοι, with the usual change of *b* into *m*, from the Zendic *baêvare*, or one of the corresponding West Iranic forms. Benfey thinks that all the other European nations had *lost* their common designation of the number thousand, as well as their ancient culture, during their long migrations, and had afterwards to re-invent them. But this is contrary to the nature of the human mind. A people that moves into new places might forget many natural objects to which they had been accustomed in their former home, but if they had once been able to grasp the idea of *thousand* they could never again deteriorate from that stage of psychical development. The conception of such a quantity as thousand is nothing like so easy to the child of nature as one would think, and it is not at all surprising that the immigrating Indo-Europeans should not yet have known how to express it. The Finns first learnt from the Slavs to think and say *a hundred*, and the common Russian still calls ten thousand *tma*—obscurity.

NOTE 12, PAGE 60.

Since the above sketch of the Horse was finished, two writings important to the theme have appeared, the contents of which are not in general contradictory to our deductions, but rather, from an archæological point of view, confirm them. We mean the *Silbervase von Nicopol*, by L. Stephani, which vase the author refers to the fourth century B.C., the best period of Greek art; and the Sepulchral Chamber of Kertch described by W. I. Stassoff (*Chambre Sépulcrale avec Fresques, découverte en* 1872 *près de Kertsch*, St. Petersburg, 1875, gr. 4°.) As the acute and erudite author of the latter treatise was assisted in his work by the celebrated traveller and hippologist A. von Middendorff, and frequently refers to the Vase of Nicopolis, we believe our readers will be grateful if we here give a concise account of what the said inquirers have gained for the history of the horse by the archæological method. My own brief remarks are inserted in brackets.

The monuments of Oriental and classical antiquity show us three types of horses: the horse of the steppe, the half-draught horse (more fitted for drawing than for riding (*demi-cheval de trait*), and the saddle-horse (*cheval de selle*). On the Vase of Nicopolis the first two kinds are faithfully portrayed. The horse ridden by the herdsman is a saddled, pure steppe horse, resembling the modern Calmuck horses; while the horses of the herd itself are no longer of the primitive breed of the steppes, but rather draught than saddle horses, and seem reared on fertile bottom lands. They are similar to the Assyrian horses depicted on the walls of Khorsabad. The Assyrian horse is also a half-draught animal, and points to still richer grass lands. (It does not seem to me that the improved Scythian horse can be derived from the Assyrian animal; their resemblance is probably explained by their common origin in Media.) An older Assyrian breed, with which we are made familiar by the Nineveh sculptures, rather resembles the archaic Greek horses depicted on vases. This latter animal is described as follows—very slender legs, stout croup, long round neck; joining of the neck to the breast like that of a stag; hair of the tail, mane, and forehead, short; the tail standing off. The same features are found in the Egyptian horse, and the Greek horse gained its shape under Egyptian influence (historically I think it hardly possible; both kinds may have come from the same region, Western Asia, and much about the same period). In contrast to the above-named two types is the third, the thorough riding horse seen on the monuments of the Sassanides and those of the Romans; for example, in the bas-reliefs of Trajan's column. It is not tall, has a short body and legs, is strong, sinewy, broad-chested, and rather

short-necked ; it must have been developed from the Arabian horse ; its ancestor may be seen in the sculptures of Persepolis. From this horse or its relations the Sassanide and Roman horse derived its compact form and noble head. (When first the Persian Empire, then the Macedonian, Greek, and lastly the Roman, rendered general exchange and traffic possible, an increasingly beautiful breed of horses spread farther and farther, from the Euphrates to the Tiber, and from the Tigris to the Nile. Hence the similarity of race in the later representations of the Iranic East and European West. The same times and circumstances created the Arab, which since then has become the noblest of its kind, as the Median had been before.) In the frescoes of the sepulchral chamber at Kertch, which belong to the period between the beginning of the second and end of the fourth century A.D., and which have nothing Greek or Roman about them, we find the inhabitants of Panticapæum in possession of the improved Arabian horse; the only animal there that is at all like the primitive race of the steppes being that in picture 6 ; at the same time all the accompaniments, ornaments, weapons, costumes, etc., are *Iranian* in character. Another striking proof of the hypothesis that the primitive inhabitants of the coasts of the Black Sea and Sea of Azov, among whom the Greeks planted colonies, were of Iranian blood, which afterwards got mixed with, or was supplanted by, the Turkish.

All this presupposes that the authors of the drawings and reliefs went to work in a naturalistic way, and did their best to seize and reproduce the features of the living object before them. But how if they lived in an age of religious and artistic conventionalism, and merely imitated the stiff forms of a given style? Or if, living in a freer time, they obeyed the laws of ideal beauty such as they were capable of conceiving? In the oldest Greek sculptures the men look like Egyptians—must we therefore conclude that nature bestowed Egyptian faces on the old Greeks, and that the latter were even descended from Egyptians? It will be seen that in this case the history of art has a word to say, but the result is only to make inquiry into the dates of the monuments preserved to us still more doubtful and complicated.

Thus much as regards the above-named essay. The present writer does not in the least imagine that he has exhausted the subject by his more historic treatment, or that all questions relating to it are solved. Still he believes that he has established the principal points of view, and quoted the weightiest authorities ; arranging the latter according to the former. Many interesting facts, such as Castration, which originated with the Scythians, Sarmatians, etc., in the east of Europe (Strabo 7, 4, 8) ; and Shoeing, which was unknown to antiquity, and

is first proved with certainty to have existed among the Byzantines in the ninth century (Beckmann's *Beiträge*, 3, 122), have been passed over because they seemed irrelevant to primitive history.

NOTE 13, PAGE 61.

The formation of the word Πελασγοί is not yet satisfactorily explained, but its meaning seems to be that given in the text. Strabo 7, Exc. 1 and 2 : *φασὶ δὲ καὶ κατὰ τὴν τῶν* Μολοττῶν *καὶ Θεσπρωτῶν γλῶτταν τὰς γραίας πελίας καλεῖσθαι καὶ τοὺς γέροντας πελίους*. The same immediately afterwards, with the addition : *καθάπερ καὶ παρὰ* Μακεδόσι *πελιγόνας γοῦν καλοῦσιν ἐκεῖνοι τοὺς ἐν τιμαῖς, καθὰ παρὰ Λάκωσι καὶ* Μασσαλίωταις *τοὺς γέροντας*. To this may be added the Albanian *pliak*=senex, vetus. Æschylus makes Pelasgus call himself the son of the earth-born Palæchthon, Suppl. 250 :

> Τοῦ γηγενοῦς γὰρ εἰμ' ἐγὼ Παλαίχθονος
> ἵνις Πελασγὸς, τῆς δεγῆς ἀρχηγέτης.

In Homer *δῖοι* Πελασγοί=the venerable. The name Γραικοί, *Graeci*, has the same meaning, and Ἰάονες probably the contrary one.

NOTE 14, PAGE 61.

Some modern philologists, such as Deimling (*Die Leleger*, Leipzig, 1862), consider the Lelegian nations and tribes to be early immigrants from Asia Minor ; in which case they would have had no right to be called Greeks and near relations of the Pelasgo-Hellenes. If they *were* such by religion and speech, they could have had no other origin than that of the European Indo-Germans in general, and the Greco-Italians in particular. Asia Minor was peopled (1) in the *north* by western offshoots of the great Iranian race, which already formed a connecting link with Europe, viz., the Armenians and their kinsmen by blood and language, the Phrygians (see the express testimony of Eudoxus and Strabo); (2) in the *south-east*, by branches of the Semitic family ; (3) in the *middle*, by races which in blood and culture were a mixture of the two. Thracians, pressing forward from the Danube, may have early reached the south coast of the Propontis by way of the Hellespont ; and Pelasgians and Leleges the western shore, by one of the numerous chains of islands that almost bridge the sea. They were then penetrated in the north with Lydian and Phrygian elements, and in the south absorbed or governed by the Semites. But in return, the Carians—a nation which in Herodotus's time considered itself aboriginal to Asia Minor—went over into the

islands, where they made slaves of the Leleges, and here and there occupied points on the continent—for example, Epidaurus. In the same east-and-west direction Phrygian tribes passed over into Thrace, and introduced Oriental culture, so far as they possessed it, into Europe. Herodotus once mentions, in passing (7, 20), a great migration of the Mysians and Teucrians over the Bosphorus, which took place in pre-Trojan times. They are said to have subjugated all the Thracians, and penetrated to the Adriatic Sea, and southward to the river Peneus. Our Giseke (*Thrakischpelasgische Stämme der Balkanhalbinsel*, Leipzic, 1858) has built a whole book on the passage, and reconstructed a large part of the primitive history of Greece on that basis. The two straits that close in the Propontis may have often witnessed such and counter-migrations. The Pæonians on the Strymon may have been the remains of one, though the assertion of the two Pæonians in Herodotus (5, 12, 13) that they were descendants of the Trojan Teucrians may be only an echo from the Iliad, where the Pæonians are allies of the Trojans, and though the manners of the Pæonian maiden struck Darius as particularly un-Asiatic; but the Great Migration, which gave Greece and Italy their similar population, and further away comprises the Celts, and northward the Germans, Slavs, and Lithuanians, certainly did not take place from Asia Minor.

NOTE 15, PAGE 62.

However thankful we may be to the late Von Hahn for his communications relating to the Albanian language and customs, his speculations on their primitive history cannot be accepted. The attempt to explain the old Lycian inscriptions by means of modern Albanian, and to stamp that idiom as specifically Iranian (O. Blau in the *Zeitschrift der D. M. G.*, xvii. 649) was undertaken with such scanty materials that it necessarily fell through. We may, therefore, feel astonished that Justi, in the preface to his handbook of the Zend language, is inclined to entertain such an airy hypothesis, and to consider the Albanian dialect "an offshoot of the Aryan languages, and especially a descendant of the Lycian speech." There is nothing as yet to prove that the Thracians were a pure Iranian race, as P. de Lagarde (*Gesammelte Abhandlungen*, p. 281), and, after him, Roesler (*Dacier und Romänen*, p. 81, in the Reports of the Academy of Vienna, 1866) are inclined to assert. The only Thracian gloss which has an undeniably Iranian stamp is the name of the so-called Thracian tribe of the Saraparai, or beheaders, in Strabo (11, 14, 14); but this will people lived beyond Armenia, in the heart of Asia, in the vicinity of the Guranians and Medians, and it was *there* that they acquired that

nick-name. Examine Strabo's words : *φασὶ δὲ* (mind, only "they *say*") *καὶ θρακῶν τινας, τοὺς προσαγορευομένους* (by the surrounding nations?) *Σαραπάρας, οἷον κεφαλοτόμους, οἰκῆσαι ὑπὲρ τῆς Ἀρμενίας, πλησίον Γουρανίων καὶ Μήδων, θηριώδεις ἀνθρώπους καὶ ἀπειθεῖς, ὀρείνους, περισκυθιστάς τε καὶ ἀποκεφαλιστάς.* If the Thracian *βρίζα* be really connected with *vrîhi*, rice, it was very likely a foreign word that had travelled from India by way of Iran and Asia Minor to the Thracians, and therefore proves nothing. The Thracian demon Zalmoxis, or Zamolxis, says Porphyrius in the Life of Pythagoras, was so called because directly after his birth a bear's skin was thrown over him—*τὴν γὰρ δορὰν θρᾷκες ζαλμὸν καλοῦσιν.* If *ὄλξις* here means bear, it would certainly agree with the Aryan, but not less with the European words : Greek *ἄρκτος*, Latin *ursus* for *urctus*. If we join the *μ* to the second half, as *μόξις*, we have the Lithuanian *meszka*, Slavic *méčika*, the bear. But as skin-bear cannot be said for bear-skin, P. de Lagarde thinks of explaining *ζαλμοξις* as meaning the *brown skin;* but even this results in nothing specifically Iranian ; *μοξις* would have its analogue in Europe in the Slavic *mèchŭ*, fur, fell, and the Slavs are no Iranians ; *ζαλ* is also quite common in Europe ; for example, Lith. *zalas*, green, *zelti*, to grow green, *zole*, grass ; Slav. *zéliye* herb, *zelényi* green, etc. But the explanation *brown skin* has two important faults. First, no god or man can be simply called skin, and the only thing that is probable, or in accordance with the thought of the Northern nations, is that the Thracians imagined their god in the *form* of a bear, or as *clothed* in a bear-skin, and styled him accordingly ; secondly, the word which is said to form the first part of the compound never means brown or dark yellow, but always green, or greenish yellow, and is therefore unsuitable for a bear-skin. So there is nothing to be gained for the Iranian origin of the Thracians from the name Zamolxis ; and either —as was common with the ancients after Herodotus—Porphyrius coined his *ζαλμός* = skin, out of the name of Zalmoxis ; or that word, if correctly quoted, corresponds to the Greek *χλαμύς*, cloak (as Fick proposed) ; in which case the latter half of the word would mean something like *-clad* or *-ed* in fur-clad, furred. On the other hand, the connexion of the Thracians and the kindred Dacians and Getæ—they all spoke one language, as Strabo expressly asserts—with the nations of the north is manifold. Grimm, while pursuing his unfortunate hypothesis, proved many kindred features between the Getæ and *Germans;* an analogy between the Getic and *Slavic* tongues was acutely recognised by Müllenhof (see the article "*Geten*" in the Encyclopædia of Ersch and Gruber). Among the Dacian names of plants the only two that can be explained, *propedula*, cinquefoil, and *dyn*, nettle, are pure *Celtic*. Similar things turn up as regards the Illyrians. In

modern Albanian *mally* is mountain, and *di* two. Niebuhr (*Vorträge über alte Länder-und Völkerkunde*, p. 305, Berlin, 1851) pointed out that these two words exactly make up the name of the old Illyrian city *Dimallum*, which stood on a two-peaked mountain; and that Albanian must be a sprout from the ancient Illyrian. But, surprising to say, there is an Old Irish word, *meall* = hill, height, and the Gallic names *Mellosectum*, *Mellodûnum* (literally hill-fortress, now *Melun*), contain the same word (see Glück, on the Celtic names in Cæsar, p. 138). The Altinian, that is, Venetic, and therefore Illyric, *ceva* = cow (in Columella)—now in Albanian *ka*, *kau* = ox—curiously agrees with the German in sharpening the consonant, whilst other Aryan languages retain the media *g*, as in Sansk. *gau*, *gô*, Slav. *gov-yádo*, etc. (may not κάχλα = ox-eye, in Dioscorides, 3, 146, contain the same Albanian word, prefixed to the Lith. *akis*, Slav. *oko*, Latin *oculus*, etc?) The Albanian *lyope*, *lyopa* = cow, goes westward through the Alps and Switzerland to the Romance dialects on the Lake of Geneva (Bridel, *Glossaire du Patois de la Suisse romande*, p. 266, Lausanne, 1866). Was it a Venetic or Euganean word found among the inhabitants of the Alps by the conquering Celts, which, as often happens with the names of primitive human occupations, especially in the mountains, has been preserved down to the present day? The Messapic βρένδος, stag (Mommsen, *Unteritalische Dial.*, p. 70) in modern Albanian *dren* (with *d* for *b*?), is found again in the Old Pruss. *braydis*, elk; Lith. *bredis*, elk and stag; Lettish *breedis*. The longer and more attentively we observe the Thracians and Illyrians, the more we are convinced that this double race—the one-half of which Herodotus thought to be the most numerous after the Indians—held, not only geographically, but ethnologically, and as regards religion and language, a central position from which branches proceeded not only to the Iranians, but also to the north and south, west and east, of the continent.

NOTE 16, PAGE 64.

In the text, speaking of a subject that only allows of doubtful conjectures, and can only be judged by the general impression made one way or the other on different minds, we have admitted that some kind of agriculture may have existed *before* the end of the Aryan Migrations; but personally we incline to the contrary view. The commonest opinion is, that though the primitive Indo-European people was not yet agricultural, for no cognate terms for the art can be decisively shown in Sanskrit; yet that such words as *arare*, *molere*, etc., which are found among the European members of that family, prove the existence of an agricultural European mother-nation. We

must first remark that those who assert this, accompanying that assertion with considerations as to the earlier or later separation of one or the other branch from the parent stock, and setting up pedigrees founded on that idea, are guilty of evident inconsequence. For if *all* the European races did not migrate as an undivided whole, and at the same time, into Europe; then *arotron*, *aratrum*, Slavic *radlo*, etc., can only have been taken over by one race from another, or been analogously formed by the several races, perhaps at widely-distant periods. It must be remembered, that in those early times the languages were still very closely related, and that when some technical process, some tool, etc., was adopted from a neighbouring nation, the name it went by in that nation would quickly and easily find its place in the dialect of the borrowing nation. If, for example, a verb *molere*, in the sense of to crush, to crumble, and another, *serere* to strew, existed in all languages of the formerly pastoral races, and one of these gradually learnt from another the arts of sowing and grinding, it would be sure to select out of the various word-roots of similar but more general meaning just the one by which the teaching nation had designated the new operation. Thus an identity of names, say for the plough, would only prove that the knowledge of it had spread from member to member of the Indo-European family in Europe; that one portion had not received it, say from Asia, or through the Semites from Egypt, another from the Iberians in the Pyrenees and on the Rhone, a third from some unknown people, and so on. And the additions by which A. Fick (*Die ehemalige Spracheinheit der Indogermanen Europas*, p. 289) has tried to increase our old stock of arguments cannot alter this state of things. If you attach modern ideas to the ancient words, you will easily find the whole of our present life reflected in the time of the earliest beginnings. What, for example, can be made out of *lira*, a furrow? In Germanic languages this word means track, rut (as in *gleise*, *i.e.*, *ge-leise*), which was evidently the true and original meaning, which still peeps out in the Latin *delirare*, to deviate from the track. After their adoption of agriculture, perhaps at very different periods, the Lithuanians and Slavs used the same word in the sense of ploughed field, the Latins in that of furrow, while the Germans retained the meaning of track. Such words as *culmus*, *stipula*, *pinsere*, etc., prove still less. A *halm*, or stalk, need not have meant a stalk of corn in particular; the Slavic *stiblo* and its congeners mean stalk in general, and the German *stoppel*, stubble, is a recent loan from Middle Latin. *Pinsere* meant pounding or bruising in general; when corn was no longer eaten directly from the roasted ear in primitive fashion, but was first freed from the husk by pounding, and reduced to a kind of rough meal, the

verb either existed already and offered itself as a name for that operation, or accompanied the operation from district to district. In quite historic times the North-European nations had scarcely adopted the most necessary beginnings of agriculture. The Celts in the interior of Britain and Ireland, as described by Strabo, Tacitus, Cassius Dio, etc.—or the Wends of Tacitus, who *latrociniis pererrant* the woods of Eastern Europe—cannot possibly be imagined as industrious husbandmen.

Fick says of ancient Germany, p. 289: "It must have been a well-cultivated land, for without assiduous tilling of the ground it could not have sent forth the enormous masses of nations that shattered the Roman Empire." Roscher has proved the fallacy of this oft-repeated argument. The very contrary is the truth; the higher the form of life to which a nation has attained, the smaller is the percentage employed in war-like enterprises; while in unsettled nations every grown man will migrate and fight. If the Germans had tilled the ground, they would not have gone forth at all to shatter the Roman Empire; more likely their own country would, like Gaul, have become a Roman province.

In what follows we add a few scattered contributions to the ancient agricultural language, which, if completely and above all critically expounded, would be no contemptible aid to the researches of naturalists into the origin and fatherland of the various kinds of corn, etc.

Gothic *hvaiteis*, wheat, is *white* corn, therefore, as the epithet implies, a later kind, for the name presupposes a knowledge of some darker grain. Wheat is not found so far north as other cereals, but appeared and was acclimatized in Central Europe at a late period. The Lithuanian *kwetys*, plural *kweczei*, Prussian *gaydis*, is not found in the Slavic languages, and must therefore have been adopted after the separation of the two branches. Now as Celtic languages also get their *white* and *wheat* from one root (Breton *gwenn*, white, *gwiniz* wheat, etc., from the Old Gallic *vindos*, white—as in *Vindobona*, Vienna—which again is founded on *cvind*), it follows that this grain came from the Gauls to the Germans, and from these to the Lithuanians (Æstyans). The Greek *alphi*, *alphiton*, barley meal, literally *white* corn again, may have taken its name from a new method of bruising or grinding, which produced a cleaner flour. Greek *pyros*, wheat, as old as Homer, is found again in the Old Slavic *pyro*, wheat, peas or lentils, and in the Lithuanian *purai*, winter-wheat (dialectic). But its first and oldest meanings, no doubt, are preserved in the Northern tongues: Russian *pyrei*, Czech. *pyr*, etc., quitch-grass; Prussian *pure*, tare; A. Saxon *fyrs*, lolium, ruscus, Engl. *furze*. So it was a name for a kind of grass, and was afterwards applied to wheat

and other corn. The Thracians and the *Skythai georgoi* may have thus named the wheat grown by them and preserved in subterranean caves. The Slavic *zhito*, grain, is clearly a formation from *zhi-ti*, to live (Root *zhiv*); the already Homeric *sîtos* can only be connected with it if it was a foreign word from the Myso-Thracian North, which is not at all impossible.

If wheat be a southern corn, *Oats* on the contrary are a northern growth. The ancients looked upon the Oat as a weed that mixed with the corn, or into which the corn degenerated, in both cases lessening or destroying the harvest. Theophrastus, *h. pl.*, 8, 92 : ὁ δ' αἰγίλωψ καὶ ὁ βρόμος, ὥσπερ ἄγρ' ἄττα καὶ ἀνήμερα. Cato, *De re rust.*, 37, 5 : "*Frumenta face bis sarias runcesque avenamque destringas.*" Cicero, *De fin.*, 5, 30, 9 : "*Ne seges quidem igitur spicis uberibus et crebris, si avenam uspiam videris.*" Virg., *Georg.*, 1, 154 :

"*Infelix lolium et steriles dominantur avenae.*"

Ovid, Fast. 1, 691 :

"*Et careant loliis oculos vitiantibus agri,*
Nec sterilis culto surgat avena loco."

Plin. 18, 149 : "*Primum omnium frumenti vitium avena est: et hordeum in eam degenerat.*" However, men learned later to distinguish a grain-bearing sort of oats from the *avena fatua*. Pliny believed that as precious corn changed into oats, so oats could turn into a kind of corn, *frumenti instar*, and adds that the Germans even sowed oats and lived exclusively on the kind of porridge made of them : *quippe quum Germaniae populi serant eam, neque alia pulte vivant.* In the Middle Ages the same thing is still reported of the British Celts (Girald. Cambr., *Descr.*, 40 : "*Totus propemodum populus armentis pascitur et avenis, lacte, caseo et butyro; carne plenius, pane parcius vesci solet*"). The Scotchman can still live on oatmeal porridge, and oat-porridge with lard is a favourite dish of Swabian and Alemannian peasants. The later Greeks at least knew of oats as fodder (Galen, *De alimentorum facultatibus*, 1, 14) ; in Asia, especially in Mysia, oats are very frequent : τροφὴ δ' ἐστὶν ὑποζυγίων, οὐκ ἀνθρώπων, εἰ μή ποτε ἄρα λιμώττοντες ἐσχάτως ἀναγκασθεῖεν ἐκ τούτου τοῦ σπέρματος ἀρτοποιεῖσθαι. As to the names of this grain, Grimm has made the fine discovery (*Gesch. d. d. Spr.*, 66) that they are indeed all different, but that they all come from that of the sheep or goat; "be it," he adds, "that the animal looks out for the wild oat (perhaps a weed similar to it), or used formerly to be fed with oats." The last supposition is incorrect, and the reason must be different. In contrast to *ficus*, the fruit-bearing fig-tree, *caprificus* or goat's-fig-tree is the wild unfruitful kind which the

Messenians called τράγος, or goat (Pausanias, 4, 20, 1). Τραγᾶν was said of sterile vines (Suid. sub. v. : καὶ τραγᾶν φασι τοὺς ἀμπέλους, ὅταν μὴ καρπὸν φέρωσιν). Theophrastus ascribed this sterility to over-rank growth (*De caus. pl.*, 5, 9, 10: ἐξ ὑπερβολῆς δὲ καὶ τὸ τραγᾶν τῆς ἀμπέλου, καὶ ὅσοις ἄλλοις ἀκαρπεῖν συμβαίνει διὰ τὴν εὐβλαστείαν). Here also belongs *capreolus*, the vine-shoot, Italian *capriuolo*, as well as the obsolete *hirquitallus*, *hirquitallare* (to put forth as it were a wanton goat's-branch, afterwards only said of boys when their voices broke on arriving at puberty). If (says Theophrastus, *h. pl.*, 8, 7, 5) a wheat-field is quite trodden down, for example, by the march of an army, the next year only small ears grow, such as are called ἄρνες, lambs, rams (that is, unfruitful, degenerated). To the Greek names of plants already quoted by Grimm —αἰγίλωψ, spurious oats, αἰγίπυρος (with a short υ in Theocritus, yet evidently from πυρός, wheat, and not from πῦρ) and βρόμος, oats (connected with βρῶμος, goat-smell, βρωμώδης, βρομώδης, smelling like a goat, though grammarians afterwards tried to distinguish the two words by a short and a long vowel)—there may be added κολόκυνθα αἰγός (for *cucurbita silvatica* in Dioscor., 4, 175) and αἶρα, darnel, ἐξαιροῦσθαι, to change into darnel (compared with Latin *aries*, Lithuanian *eris*). All this shows, that when oats were called "goat's-weed," it was intended to describe them as empty and without value, as a corn-like weed ; the name presupposes an acquaintance with cereals, and though the species was first used for human food in the North, it must have come, together with its name, from the South, perhaps by way of Thrace.

Rye, which only just grazes the northern frontier of the two classical countries, was considered by the later Romans, when they came to know it, as a nasty, black, distasteful, and indigestible grain. It is still disliked by the Romance nations, and Goethe justly remarks ("Campaign in France, Sept. 24, 1792") that "white bread and black are really the shibboleth, the battle-cry between Germans and Frenchmen." Where the girls are black, the bread is white, and *vice versâ*.

SOLDATEN-TROST.

Nein, hier hat es keine Noth,
Schwarze Mädchen, weisses Brod;
Morgen in ein ander Städtchen,
Schwarzes Brod und weisse Mädchen.—GOETHE.

By *frumentum*, corn, the Romance nations mean chiefly wheat (*formento*, *froment*) ; by *korn* the North German means chiefly rye, as the Swede means barley. In the Alps however, a cold region, the Taurini, a branch of the Ligurians, cultivated rye, which they called *asia* (Pliny, 18, 141). In Latin we first find the name *secale* in Pliny,

in Diocletian's Edict *sicale* (meaning perhaps sickle-corn), which now runs through the Romance tongues, including the Wallachian, and has intruded also into Celtic languages, into Albanian and modern Greek (Alb. *thékere*, Wal. *secare*, Mod. Greek *síkali*), with a striking removal of the accent to the first syllable; Italian *ségola*, *ségala*, French *seigle*, etc. This was the name within the boundaries of the Roman Empire; among the Hyperborean nations, in the true rye-region, we find another wide-spread nomenclature: Old High German *rocco*, Old Norse *rugr*, A. Saxon *ryge*, Pruss. *rugis*, Lith. *ruggys* (pl. *rugges*), Russ. *rozh*, Czech. *rezh*, etc., Magyar *rosz*; among the West Finns the same word with the more antiquated *g*, *k*; among the East Finns, Tartars, etc., with the Slavic assibilation. This last fact, as well as the agreement between the Germans, Lithuanians, and Baltic Finns, comes of the word having travelled from one nation to another; but to which nation did it first belong? Benfey (*Griech. Wurzellexicon*, 2, 125) thinks that rye meant red corn, and came to the Germans from Slav-land; but the words that signify red, rust, etc., have in the Slavic tongues a radical *d*, from which, and not from *g*, their ambiguous *zh* has arisen. The isolated Cambrian *rhygen*, *rhyg*, seems to have been borrowed from the Anglo-Saxon, as the absence of consonant-change shows; and the equally isolated provincial French *riguet* (in Dauphiné, see De Belloguet, *Ethnogénie Gauloise*, 1, p. 148) may have been casually dropped there in the course of the Teutonic Migration. Another significant form of name is handed down to us by Galen (*De alim. facult.* 1, 13) from Macedonia and Thrace. There he found a kind of corn, which was ground into an evil-smelling black flour, evidently rye; it was cultivated by the aborigines, and called by the native name βρίζα. The ζ of the second syllable is easily recognised as a *g* soft, which is also found in the Slavic *rozh*, etc., and was to be expected among Scythians, an Iranian race. Now, has the *v* before the *r* been lost in going northwards—which often happens—and must we look for the root of the word among those that begin with *vr*? or is βρίζα identical with the Greek ὄρυζα, rice, which came to the Greeks from India (Sanskrit *vrîhi*) through Persia? To what nation then is due the change of the vowel to a deeper *u*, and of the *h* into *g*, with quite the Teutonic "shifting of sound," though we know the Germans dwelt north and west of the Thracians, Scythians, and Slavs, and thus were the last to receive the word? or must we suppose that they adopted the word at a time when the assibilation of the guttural had not yet appeared among those mediating nations? De Candolle (*Géographie Botanique*, p. 938), believes the district between the Alps and the Black Sea, the present Austrian Empire, to be the home of the rye, certainly on not

very weighty grounds. As to the origin of the cereals in general, we refer our readers to Humboldt (*Ansichten der Natur*, i. p. 206, etc., ed. 3, Stuttgart, 1871) ; at present nothing more can be said on the subject than what is contained there.

The ancient name for the primitive plough, which consisted of a pointed, crooked piece of wood, is in Lithuanian *szaka*, bough, tooth, prong, the end of a stag's antlers ; Old Slavic *sokha*, piece of wood, stake ; and in the modern languages sometimes fork, gallows, but principally hook. Now as the Slavic *s*, Lithuanian *sz*, is sometimes derived from an original *k*, German *h*, we may be allowed to identify the Gothic *hoha*, plough, Old High German *huohili*, with the Lithuanian *szaka* and Slavic *sokha*. But *hoha* itself evidently belongs to the verb *hahan*, with a nasalized sub-form *hangan* (perhaps the long *o* arose from the suppression of the *n*), from which verb a multitude of expressions for the ideas "crooked, angular, bend, joint," etc., are derived : for example, the German *haken*, hook, *hacke*, heel, *henge*, hinge, *henkel*, handle, Old High Germ. *hahhila*, pot-hook, Greek κοχώνη, κόκκυξ, os sacrum ; further developed with *s* : German *hächse*, hough, knee-cap, Latin *coxa*, huckle-bone, corner of the field-fence, Old Irish *cos*, Cambrian *coes*, with guttural dropped, hip or thigh, etc. With this agree several West-Finnish words, all indeed borrowed from Teutonic, but some of them—a fact observable in several other cases—*before* our Teutonic consonant-change took place ; Esthonian *konks*, hook, *kook*, tooth of a harrow, hook on a well, pot-hook ; letter for letter the Gothic *hoha*, etc. That the Greek γύης at first meant nothing but a crooked piece of wood, a bent bone, we learn from the kindred words τὰ γυῖα, the knees, later, any limb ; γυιός crooked ; γυιόω, to lame ; γύαλον, crookedness ; Ἀμφιγυήεις, limping with both legs, the lame Hephæstos (not correctly explained by Welcker, *Gr. Götterl.*, 1, 633), etc. So *hoha* was originally a crooked antler, a bent bough or bone, with which the soil was torn up. Accordingly the Celtic words *suh*, *soch*, ploughshare, Old High Germ. *sêh*, *sêch*, French *soc*, cannot be related to the Slavic *sokha*.

To the Slavo-German circle of culture belong also the Gothic *hlaifs*, bread, and *quairnus*, mill, millstone. *Hlaifs*, *hlaibs* (in all Teutonic dialects), Lithu. *klepas*, Lett. *klaips*, Slav. *khlebŭ* (in all Slavic languages) are the same as the Latin *libum* ("undoubtedly for *clibum*," Corssen, *Kritische Nachträge zur lateinischen Formenlehre*, p. 36) and Greek κλίβανον, κρίβανον. That the word, and therefore the art of baking bread, a late one everywhere, came to the Slavs from the Germans, is proved by the initial having suffered consonant-change in German fashion ; the Lithuanians, with whom the guttural aspirate is wanting, replaced it, as in similar cases, by the corresponding *tenuis*. The

original meaning was that of a round cake made of dough and baked in the oven, in contrast to the older porridge. In Greece the word was very old, for Alkman already uses κριβανωτός, κριβάνη, and κρίβανον for πλακοῦς (*Fragm.* 62, Bergk., with the words quoted from Athenæus), but it may have migrated to Greece from Asia Minor (Alkman himself was born at Sardis). From Greece or Italy it was propagated through intermediate nations to the Germans, who handed it on to the Lithuanians and Slavs. We believe that *libum* was borrowed from the Greek, like *puls* (πόλτος, already used by Alkman), *massa* (μᾶζα), *placenta* (πλακοῦντα), etc. The later expressions, "a *loaf* of bread," *i.e.*, a bread of bread, Old Norse, *ost-hleifr*, a bread of cheese, are only instances of metonymy, like the Italian and French *pane di zucchero*, *pain de sucre*, and in salt mines, "a bread of salt," etc. As *hlaifs* was named from the oven, so the far-spread Italian *focaccia*, already used by Isidore, and found again in Old and Middle German, Servian, Bulgarian, Russian, Magyar, Wallachian, Turkish, and Modern Greek, was called after *focus*, being a cake of bread baked hard in the hot ashes of the hearth (see Diez, *Wörterb.* sub. v., and Miklosich, *Fremdwörter*, p. 118). We believe that in our *brod*, bread, there lies the idea of leavened bread, of the ἄρτος ζυμίτης, such as, tied to the meat, was set before the guests at the banquet given by the Thracian king Seuthes to Xenophon (*Anab.* 7, 3).

Quairnus, quern or hand-mill (in all Teutonic languages), Lith. *girna*, millstone, pl. *girnos*, mill, Slav. *zhrŭnŭvŭ* (in all Slavic languages), also Old-Irish *broon*, *bróo*, *bró* (*b* for *g*), is called after a circular movement, if we compare the Greek words: γῦρος, crooked, bent (Odyss. 19, 246), γῦρος, circle, γυρεύω, to gyrate, γύριος, round, γῦρις, fine wheat-flour, Γυραί πέτραι (round sea-rocks like millstones). The long *v* after the γ is reflected in the German *qu*; *quairnus* and γῦριϛ can have nothing to do with German *korn*, *kern*, Slav. *zrŭno*, Lith. *zirnis*, as the initial of these Slavic and Lithuanian words and the short vowel of the first syllable show. It was the heavy task of slaves, who could never be wanting among rude and warlike pastoral nations, to turn the primitive hand-mill. For this work there is a word common to the Germans and Slavs: Goth. *arbaiths*, Slav. *rabota*; which, though it may have the same root as the Latin *labos*, yet in German and Slavic shows the same derivative suffix; and perhaps the root itself is still preserved in the Slavic languages—*rab*, *rob*, slave. Men and maids, while they sat turning the upper millstone, accompanied their work with mill-songs; the primitive custom of singing during all work that admits of it, still prevails among Russians, Bedouins, etc. The modern words, *mühle*, *müller*, are in German, as in the other European languages, not derived from the native verb *malan*, to grind, but are borrowed from

the Latin ; in company with water-mills, and improved mechanical arrangements for grinding and cleaning corn, they spread from Italy throughout Europe. The flour produced from the primitive hand-mill was impure, and mixed with earth, and grated between the teeth ; and in this state the European traveller still finds it among distant barbarians.

The real *Plough*—constructed of several pieces, with an iron share, and after further development furnished with wheels—first became a necessity when, in the course of centuries, the ground became freer from stones and roots, and agriculture lost its nomadic and merely accessory character. From that period, when the north-eastern nations had partly advanced from their woods and pastures to the south-west, and partly received from that quarter many elements of culture, dates the Germano-Slavic word plough, Slav. *plugŭ*. The history of this word is pretty clear. In Pliny, 18, 172, we find the notice: "*Id non pridem inventum in Raetia Galliae, ut duas adderent tali rotulas, quod genus vocant plaumorati.*" By the inhabitants of Gallic Rhætia we must understand sub-Alpine husbandmen originally of Celtic origin, and the above appellation, though the reading is uncertain, and the form of word obscure, we may suppose to be the oldest name of the later plough. The Anglo-Saxons, who crossed to Britain in the fifth century, did not yet possess the word, which was first known in those islands in the eleventh century. But about the middle of the seventh century we find in the Longobardian Law—ed. Roth. 288 (293)—the following words : "*De plovum. Si quis plovum* (*plobum*) *aut aratrum*," etc. From Germany the word passed to the Slavs, when they, following as usual the example of the Germans, began to adopt the higher forms of agriculture. At the present time we find the plough in use among the Little Russians, but Great Russia still has the old hook-plough. How tough "natural" nations are, whose morals are formed by tradition, and whose whole thought consists of religious superstition, and what a hard matter it is to raise them but one step in civilization, we learn from the following notice in Herberstein's *Rerum Moscoviticarum commentarii, de Lithuania:* "The Lithuanians only cultivate their land with wooden ploughs, though the soil is rich and not sandy. When they go to work, they take several plough-beams with them, so that if one breaks, another may be at hand (Old Hesiod advises the same thing : εἴ χ' ἕτερόν γ' ἄξαις, ἕτερόν κ' ἐπὶ βουσὶ βάλοιο). A certain governor of the province wished to teach them better methods, and sent for a large stock of iron ploughs. But as the harvest was bad the following year, the peasants attributed its failure to the iron implements, and were on the point of revolting ; the governor was obliged to withdraw his ploughs and consent to the rude old fashion again."

The Greek and the Roman names for the same grains are singularly unlike each other. Compare σῖτος, πυρός, ζειά, τίφη, ὄλυρα, ἄλφιτα, ἀλείατα, χίδρα, χόνδρος, κρίμνον, πίτυρα, κάχρυς, etc., with *triticum*, *ador* (adj. *adoreus* for *adoseus*), *far* (gen. *farris* for *faresis*, *farina* for *farrina*, *farrago*), *panicum*, *siligo*, *pollen*, *alica*, *acus* (gen. *aceris* for *acesis*), *palea*, *furfur*, etc. The same with the tools and apparatus; for example, the parts of a plough : ἱστροβοεύς, ἐχέτλη, ὕννις, ἔλυμα, compared with *temo*, *stiva*, *bura*, *vomer*; or λικμός, λικμητήρ, πτύον, winnowing-shovel (all Homeric), λίκνον corn-fan (*Hymn. in Merc.*, 21, 63, in the sense of cradle), ἀλωή (Homeric), ὕλμος, mortar for pounding grain, ὕπερος, pestle (both in Hesiod, *Op. et D.*, 423 :

ὕλμον μὲν τριπόδην τάμνειν, ὕπερον δὲ τρίπηχυν),

with *vannus*, *evallere*, *area*, *pila*, *pilum*, etc. The Latin expressions *sarire*, or *sarrire*, *runcare*, *strigare*, *liva*, *porca*, *elix*, *colliciae*, *metere*, *messis*, *rallum*, *rastrum*, *ligo*, *occa*, *irpex*, *crates*, etc., are either wanting entirely in the Greek, or, at least, in this special shape and meaning. The Latin *sarpere*, *sarmentum*, agree with the Greek ἅρπη (and the Slavic *srŭpŭ*), but point to a tool which may be older than agriculture ; how σεμίδαλις and *simila*, *similago*, are related to each other, is obscure ; πτίσσειν may be the same as *pinsere*, but it proves little : that ἄρτος and *panis* (older form *pane*) do not agree is not to be wondered at in so late an invention as bread. It seems to us vain to try to deduce the original identity of Greek and Italian cultivation of the soil from their land-measuring. It has indeed been asserted that the *vorsus* of the Oscans and Umbrians, 100 feet square, corresponds to the Greek *plethron* (Mommsen, *Die Unterital. Dialekte*, p. 260); but the *plethron*, like the foot and the stadion, was of Babylonian origin, and we do not know the original length of the Umbrian *vorsus*. If it was identical with that of the *plethron*, the measure can only have been derived from the Greeks or from the common Oriental source. But if the agreement only consists in the similar division into a hundred feet, it is clear that this, among nations in whose languages the decimal system prevailed, amounts to nothing. The Gallic *candetum*, as the name shows, was also measured by the number 100. Much more significant is the *difference* between the Roman and the Greek division of land. The Roman *actus* measures 120 feet, the *acnua* 120 square feet (Varro, *De r. r.*, I, 10, 2), a measurement on the duodecimal system, which was also Etruscan and perhaps Iberian. On the tablets of Heraklea on the Siris the customary land-measure, σχοῖνος, contains 30 ὀρέγματα of 4 feet each, therefore again 120 feet (Corp. Inscr. III. No. 5774, 5775).

Note 17, page 65.

If μελίνη, *milium*, was literally honey-fruit (Plin. 22, 131 : "*Panicum Diocles medicus mel frugum appellavit*"), it must have meant sweet fruit of ears, mild vegetable food in general, in contrast with the bloody animal food of the Nomad. Call to mind the Homeric expressions : σίτου τε γλυκεροῖο, σίτοιο μελίφρονος, μελιηδέα, or μελίφρονα πυρόν, λωτοῖο μελιηδέα καρπόν, τρώγειν ἄγρωστιν μελιηδέα. If it be so, the Lith. *malnos* must be a borrowed word, for that is one of the languages that express honey with a *d* in the place of *l*. Millet—in what follows we do not distinguish *milium* from *panicum*, or κέγχρος from ἔλυμος—is the food of the Iberian nations in the extreme west, and of Celts. In Aquitania—the land between the Pyrenees and the Garonne, inhabited by Iberians—there grew, as Strabo (4, 2, 1) assures us, hardly anything but millet. Pliny, 18, 101 : "*Panico et Galliae quidem, praecipue Aquitania utitur. Sed et Circumpadana Italia, addita faba, sine qua nihil conficiunt.*" Pytheas (in Strabo, 4, 5, 5) found that some inhabitants of the (Celtic) coasts visited by him fed on millet, others on vegetables (λαχάνοις, beans ?) and roots (turnips?). When Cæsar besieged Massilia, the inhabitants lived on old millet and spoilt barley, which had been kept a long time in the State magazines (*De Bello Civ.*, 2, 22 : "*Panico enim vetere atque ordeo corrupto omnes alebantur, quod ad hujusmodi casus antiquitus paratum in publicum contulerant*"). Polybius reports of Gallic Italy, that he had seen with his own eyes an immense wealth of both kinds of millet (2, 15, 2 : Ἐλύμου γε μὴν καὶ κεγχρου τελέως ὑπερβάλλουσα δαψίλεια γίγνεται παρ' αὐτοῖς) ; and Strabo says that, being well watered, the country was rich in millet, and could never suffer from famine, as that grain never failed (5, 1, 12 : ἔστι δὲ καὶ κεγχροφόρος διαφερόντως διὰ τὴν εὐυδρίαν· τοῦτο δὲ λιμοῦ μέγιστόν ἐστιν ἄκος, πρὸς ἅπαντας γὰρ καιροὺς ἀέρων ἀντέχει, καὶ οὐδέποτ' ἐπιλείπειν δύναται, κἂν τοῦ ἄλλου σίτου γένηται σπάνις) ; and also quite late, at the end of the Gothic kingdom in Italy, an order is issued during a famine that panicum shall be divided among the people out of the magazines of Ticinum and Dertona at a small price (Cassiod. Var. 12, 27). Farther to the east, the Alazones, a Scythian people on the Hypanis, sowed wheat, onions, garlic, *beans and millet* (Herod. 4, 17). In Thrace, the Ten Thousand, returning with Xenophon, marched along the Pontus to Salmydessus through the country of the *millet-eaters*, Μελινοφάγοι, and in Demosthenes's time the subterranean granaries contained millet and ὄλυρα (Demosth. de Chersoneso, p. 100, ex. Phil. 4, 16). Pliny, 18, 100, declares that millet porridge is the chief nourishment of the Sarmatians : "*Sarmatarum quoque gentes hac maxume pulte aluntur;*" and that panicum is the favourite food of the Pontic peoples (101 :

"*Ponticae gentes nullum panico praeferunt cibum*"). The Mæotians and Sarmatians live on millet, as the Athenians do on figs, and other folk on other things (Æl. V. H. 3, 39 : Βαλάνους Ἀρκάδες, Ἀργεῖοι δ' ἀπίους, Ἀθηναῖοι δὲ σῦκα, Τιρίνθιοι δὲ ἀχράδας δεῖπνον εἶχον, Ἰνδοὶ καλάμους, Καρμανοὶ φοίνικας, κέγχρον δὲ Μαιῶται καὶ Σαυρομάται, τέρμινθον δὲ καὶ κὰρδαμον Πέρσαι). In Pannonia, according to Cassius Dio, 49, 36, who was born there, millet and barley were the popular food, and Priscus, while on an embassy to Attila, was entertained exclusively with this grain (Müller, *Fragm.* 4, p. 83). The Japodes, a mixed Celtic Illyrian race on the mountains of the Illyrian coast, lived on spelt and millet (Strabo 7, 5, 4 : ζειᾷ καὶ κέγχρῳ τὰ πολλὰ τρεφόμενον). Among the classic nations, the millet, if indeed they had been acquainted with it before their separation in Pannonia and Illyria, fell into the background before other cereals ; only the Lacedæmonians, conservative in everything, were still called millet-eaters (Hesych. ἔλυμος σπέρμα ὃ ἔψοντες οἱ Λάκωνες ἐσθίουσιν). The Germans, Lithuanians, and Slavs lived too far to the north for us to suppose that the cultivation of millet originated with them. And they had quite different names for it, Old High Germ. *hirsi*, Slav. *proso*, Lith. *soros*, plur. of *sora*, millet-corn. When the Slavs moved into the region of the Danube, millet became a favourite with them, which it has never been with the Germans ; in modern North Italy it has been supplanted by rice and maize. From the above passages it will be seen that the bean (Lat. *faba*, Slav. *bobŭ*, Pruss. *babo*, Lith. *pupa*, Old Irish *seib*, where *s* has replaced *f*, Cambr. *ffa* for *fab ;* see Grimm's Dictionary for the German *bohne*) accompanies millet ; as to the turnip (Gr. *ῥάπυς*, Lat. *rāpa*, *rāpum*, Old Norse *rofa*, Slav. *repa*, Lith. *ropė*) we will add what Pliny says 18, 127 : "*A vino atque messe tertius hic* (the turnip) *Transpadanis fructus*." The high antiquity of the bean, especially of the field-bean, *Vicia Faba*, L., which is already mentioned in the Iliad (13, 589) under the name of *κύαμος*, which stands related to the collat. form *πύανος*, *πύαμος*, as the Old Latin, Sabine, and Faliscan *haba* to *faba* (Mommsen, *Unterital. Dial.*, p. 358), is rendered probable by many circumstances ; for example, the part it played in antique worship ; but that it is nevertheless younger than the contented turnip, which thrives in the ashes of burnt brush-wood, seems to be proved by the language of the West Finns, in which the bean (Finn. *papu*, Esthon. *ubba*) has, like almost all objects of culture, borrowed an Indo-European name, while the turnip has a native word to itself (Finn. *nauris*, Esthon. *naris*, *nairis*, Carelian *nagris*).

Note 18, page 67.

The Potter's-Wheel is said to have been invented by Anacharsis the

Scythian, or, according to Theophrastus, by Hyperbios the Corinthian (Schol. to Pind. Ol. 13, 27). As Corinth was a chief seat of Phœnician culture, there may be in the latter statement a hint as to the origin of the potter's art among the Greeks ; but the report, like almost everything in the Greek writings "concerning inventions," has very little historical value. The tyrant Kritias praises κέραμος (pottery), the son of wheel and earth and kiln, as an invention of his native city Athens (*Fragm.* 1, 12, Bergk. :

> τὸν δὲ τροχοῦ γαίης τε καμίνου τ' ἔκγονον εὗρεν,
> κλεινότατον κέραμον, χρήσιμον οἰκονόμον,
> ἢ τὸ καλὸν Μαραθῶνι καταστήσασα τρόπαιον).

There was also an Attic demos, Κεραμεῖς, whose members sacrificed to the hero Keramos. As earthen vessels, the burnt and the unburnt, those made by hand and those turned on the potter's wheel, are distinguishable at the first glance, we must on this point refer our readers to the antiquarian excavators.

The testimony of ancient languages seems to point to the practice of Weaving having existed *before* the separation and migration of the nations ; Greek *hyphaino* and our *weave*, Latin *texere* and Slav. *tŭkati*, etc. If we were only certain that these words meant in primitive times the twistings of thread on the spindle, and real weaving on looms, and not merely a skilful knitting, plaiting, or sewing ! In plaiting mats out of the bast of lime-trees, with long and cross strips, a bone needle, to which the cross-strip was fastened, or a hollow bone through which it ran, etc., expressions might exist which were easily transferred to the warp, woof, shuttle, etc., when invented at a later period. Even now, in distant corners of Europe inhabited by a conservative people, weaving is carried on after the fashion of this primitive plaiting or knitting. It was witnessed by C. J. Graba in 1828 among the inhabitants of the Faröe Isles, and lately by Franz Maurer among the Bosnians, *Reise durch Bosnien*, p. 266 : "They weave by hand without a shuttle, the cross-thread being passed through those that are stretched parallel by means of a long wooden needle, and then pressed home with a stick."

Whoever is tempted to ascribe the knowledge of weaving to the primitive nations should remember that this art passed from very rude beginnings through a number of stages up to its perfection in historical times. How naturally does a modern loom, a flying shuttle, insinuate itself into the fancy of the comparative philologist ! For the rest, the Greek and the Latin words for the spindle, the loom, and the operations performed by them, are very dissimilar. On the one hand : ἄτρακτος, ἠλακάτη, κλώθω, ἤτριον, κανών, μίτος (Hom. Il. 23, 760 :

ὡς ὅτε τίς τε γυναικὸς ἐϋζώνοιο
στήθεός ἐστι κανὼν, ὅντ' εὖ μάλα χερσὶ τανύσσῃ,
πήνιον ἐξέλκουσα παρὲκ μίτον, ἀγχόθι δ' ἴσχει
στήθειος),

κερκίς, κρέκειν (in Sappho, Fr. 90, Brgk. : κρέκην τὸν ἵστον), κρόκη, Accusative, κρόκα (Hesiod, *Op. et. D.*, 538 :

στήμονι δ' ἐν παύρῳ πολλὴν κρόκα μηρύσασθαι),

ἱστός, στήμων (Lat. *stamen*, probably a Doric word borrowed), σπάθη (Lat. *spatha*, borrowed late), ἀντίον (in Aristophanes), ἀγνῦθες (stone-weights). On the other : *Colus*, *fusus*, *filum*, *glomus*, *jugum*, *radius*, *tela*, *trama*, *licium*, etc. In Slavic the language of weaving has much that is remarkable : *Krosno*, loom, web (the same as κρέκειν, κρόκη, with the Slavic change of *k* into *s*), *atŭkŭ*, Russ. *utok*, woof, weft (from the verb tŭkati), *nitĭ*, thread (belongs to νέω, νήθω, etc.), *navoi* (Lat. liciatorium), *presti* (nere), *predeno* (tela), *preslica* (fuscus), *predivo* (filum), *vratilo*, *vreteno* (quite the same as verticillus), *brŭdo*, Russ. *berdo*, South-Slav. *brdo* (pecten textorius, *licium*), etc. The absence of these expressions in Lithuanian, proves that they cannot be very old, for the Lithuanian has independent names : *udis*, web, *austi*, to weave, *szeiwa*, shuttle, *giga*, thread, mesh (*nytis* means the shaft of the loom), *stákles*, the loom (a plural *t*, Slav. *stanŭ*), *werpti*, to spin, *warpste*, spool, spindle, *drobe*, linen, etc. The Old Slav. *kadelĭ* is perhaps only a corruption of the German *kunkel*, which itself is derived from the Latin *colus*. Everything shows that here we are on more modern ground.

NOTE 19, PAGE 67.

That the names for Gold were different among the Greeks and Romans, and among the Lithuanians and Slavs respectively, is a proof of the late appearance of that metal in Europe. The Latin *aurum*, gold, and *aurora*, dawn, etc., were originally *ausum*, *ausosa*; the Etruscan Sun-god *Usil* makes it probable that the Etruscans had a name for gold similar to the Latin one. Strange to say, we find the same name at the other end of Europe ; Prussian *ausis*, Lithuanian *auksas* (with the frequent Lithuanian strengthening of the sound by placing a *k* before the *s*). How could the Italian name have reached the far northern sea but along the same route as the amber trade, which travelled the sacred road of the Etruscans from the Heliades and the Eridanus, at the head of the Adriatic, to the haffs and low-grounds of Prussia ? Instead of that name the Lettons use the Slavic word *selts* ; so at that time they already lived apart, in a place where

there was no amber, and which was not reached by Italian influences. The Celts also received gold from Italy, but later than the Prussians, namely, at a time when *ausum* had already changed its *s* into *r* (Old Irish *ór*, in the younger dialects *our*, *eur*, *owr*), great as was the delight that family of nations afterwards took in the glitter of gold ornaments. The Slavs and Germans have a common word: Gothic *gulth*, Slav. *zlato*, Russ. *zoloto*, which is of late origin, for the Lithuanians do not possess it, and it points, not to Italy, but to the Iranian world in the south-east. The Greek χρυσός, which may certainly be classed with the above forms, was more than a generation ago declared by Pott to be borrowed from the Phœnician, and Renan holds the same opinion (Max Müller's *Mythologie comparée*, p. 36: "χρυσός *me para't le semitique kharous, qui aurait passé en Grèce par le commerce des Phéniciens, comme le mot* μέταλλον." In fact, later discoveries of inscriptions have shown that *kharûs*, which is only poetical in Hebrew, was the common Phœnician expression for gold. It was by slow degrees that gold found its way into the wildernesses of Europe and Turanian Asia; their cupidity once awakened, led to digging up the native soil for hidden treasure. The Western Finns call gold by its German name; the tribes of the Volga and Ural, among them the Magyars, use none but Iranian (Massagetian, Herod. 1, 215) words; so young and misleading is the legend of the far North-east being the land of gold.

With regard to Silver, the European nations are also divided into groups: Germans, Lithuanians, and Slavs have one name for the metal, Greeks and Romans another; which last sounds like an echo from Asia, while the former (Goth. *silubr*, Slav. *srebro*, Pruss. *siraplis*) reminds one vividly of the Homeric *Alybē* in the Pontus (for *Halybē*, and this for *Salybē?*), ὅθεν ἀργύρου ἐστὶ γενέθλη. The Semitic languages also differ greatly in the names of silver; it is singular that the Syrians, and then the Persians, altogether ceased to use them, adopting instead the Greek ἄσημος (uncoined) in the form *sêm*, *sîm*.

NOTE 20, PAGE 67.

As the knowledge of metal usually affords a principal basis for classification in theories about the so-called Lake Dwellings, we take this opportunity to say a few words on these remains of ancient human existence. And first of all let me remark, that it is not well to try and guess the primitive history of European mankind from any isolated point of view; it only leads to baseless fancies. But our grave-searchers, with their "three periods," often knew very little of ancient ethnography and traditional history; on the pure ethnologists, with

their "races of man," the light of comparative philology had not dawned ; comparative philologists have not always taken into account the facts and possibilities of the history of culture ; theologizing primitive historians did not take the trouble, or did not dare, to ascertain critically the historical value of the documents they quoted. Now, as to the pile-dwellings in lakes and marshes, it is not true that history is altogether silent about them. Hippocrates (*De aëre, locis etc*, 22, p. 268, Ermerius) reports of the Colchians, that they had erected their dwellings of wood and rushes in the midst of the waters : *τά τε οἰκήματα ξύλινα καὶ καλάμινα ἐν τοῖσι ὕδασι μεμηχανημένα.* These Colchians are the people called by others Μοσύν-οικοι, *i.e.*, dwellers in wooden towers (*μόσυνοι, μόσυνες*, also with double *σ*). It is true that we are not certain to which family of nations these Colchians belonged. But that Indo-European races were no strangers to this kind of architecture is proved by the remarkable report of Herodotus, 5, 16, on the Pæonians in Thrace, a passage which the world had had before it more than two thousand years before old piles at Meilen on Lake Zurich, together with new "strata of culture," were disclosed to our astonished eyes. "The Pæonians," says the father of history, "live on piles in Lake Prasias ; whoever takes a wife—and they marry more than one—has to drive in three piles, for which the neighbouring mountain forest furnishes the material ; the piles support a deck ; on this deck every one has his hut (*καλύβη*), trap-doors open on to the lake, and a narrow bridge leads to the land ; the little children are tied by the foot, so as not to fall into the water ; horses and domestic animals are fed with fish, for the lake has such an abundance that you need only let a bucket down through the trap-door to pull it up again full of fish"—evidently because of the plentiful nourishment afforded by the offal. Now, as the Thracians in many of their customs have a decidedly northern look, why should not the lakes in Central Europe also have been inhabited in a similar manner at that time? All the more because, at a time when Europe was hardly anything but one great forest, and rivers and lakes offered natural highways and halting-places, such pile-dwellings, with approaches that could easily be cut, offered to the men of that day something like the security that the fortresses of Mantua and Comorn do now. It is certain that the very ancient towns of Spina and Atria in the district about the mouths of the Po, as well as the habitations of the Veneti, which rose in the midst of waters and marshes (Strabo, 5, 1, 5 : *τῶν δὲ πόλεων αἱ μὲν νησίζουσι, αἱ δ' ἐκ μέρους κλύζονται*), were in the same way built upon piles. Ravenna, in quite historical times, gives us a picture of this condition of things. It was built entirely of wood, and penetrated with canals ; traffic took place by means of bridges and

gondolas (Strabo, 1, 1, 6 : ξυλοπαγὴς ὅλη καὶ διάρρυτος, γεφύραις καὶ πορθμείοις ὁδευομένη) ; all the dwellings rested on piles (Vitruv. 2, 9, 11 : "*Est autem maxime id considerare Ravennae, quod ibi omnia opera et publica et privata sub fundamentis ejus generis habent palos*"), namely, of alder-wood, which was indestructible under ground ; the buildings themselves were of larch-wood, which was brought down the river Po, and was said to defy fire. Like Ravenna, Altinum was also nothing but an improved pile-village ; and the same art and habitude caused at first small settlements, and then the splendours of Venice, to rise in the lagoons at the mouth of the Brenta. Cæsar found the banks of the Thames guarded by pointed stakes, and the same kind of stakes stuck in the river, covered by the water (*De B. Gall.*, 12, 18: "*Ejusdemque generis sub aqua defixae sudes flumine tegebantur*").

It is not surprising that, among the remains of these edifices belonging to the most different points of the Indo-European region, there should be found some that contain only stone tools. Though the immigrant shepherds were acquainted with metal in the form of copper, as is proved by comparing the Sansk. *ayas*, Zend. *ayanh*, Latin *aes*, Goth. *aiz*, Old Irish *îarn* for *îsarn*, they certainly did not manufacture it into tools, but used stone weapons ; this is confirmed, among other things, by words like *hamar* and *sahs* (Grimm, "Teut. Myth.," 181). Then, according to their position in the long string of nations, the different races sooner or later received from the South knives and swords of bronze—that is, mixed copper and tin ; but it would be altogether contrary to experience and nature to suppose that this change took place suddenly. It must have been centuries before the stone axe gave way to the bronze knife in war and hunting, in the felling and splitting of trees, in the slaughtering of animals, etc., and at last became entirely obsolete. Custom, inherited skill and practice, the example of ancestors, myths and religious superstition, and the natural dulness of primitive folk, were all in favour of stone and bone implements ; and the few bronze swords that found their way into the interior must have been for a long time only toys and ornaments of single chiefs. When Cæsar landed in Britain he found bronze and iron bars of a certain weight used instead of money (5, 12 : "*Utuntur aut aere aut taleis ferreis ad certum pondus examinatis pro nummo*")—that is, a period still surviving there, which was extinct in continental Gaul, where money had long been coined ; the island, though rich in tin and other metals, received its iron from abroad (*aere utuntur importato*) ; and the tribes in the interior, having for the most part no agriculture, feeding on flesh and milk, and clothed in skins, would probably make no use of metal. In the north of Germany and Slav-land the stone age reached far into really historical

times, and, in single cases, even touched on the age of gunpowder. Considering all this, it seems not too venturesome to suppose that the inhabitants, even of those Swiss lake-dwellings which have hitherto yielded only stone implements, but at the same time proofs of agriculture being practised, were of Celtic—nay, of specially Helvetic race; that the inhabitants of the lake-dwellings in the Emilia were Umbrians, either independent or subject to the Etruscans; that those of the Mecklenburg lake-dwellings were Goths, and so on. The only new thing that has been brought out by the discovery of the lake-dwellings —that is, the only circumstance that could not perhaps have been established with such certainty by history alone—is the priority of agriculture to the metals, and indeed of a tolerably advanced agriculture, with several varieties of barley and wheat, with flax harvested and neatly tied up in bundles, fruit of trees, etc. If we have made no mistakes in observation, and if later discoveries do not upset the results hitherto obtained, it would stand proved that the metallurgy of the civilized world of the Mediterranean penetrated very late into the region of L. Constance, at any rate later than settled abodes and the cultivation of corn and flax. A significant legend related by Pliny, 12, 5, seems to indicate that the art of forging metals came to the Gauls from Italy, at the same time with the knowledge of wine and oil, or not long before the great invasions of Bellovesus and Sigovesus. A Helvetian citizen named Helico (evidently a representative name), after residing at Rome to learn the art of forging metals—*fabrilem ob artem*—brought home from there a dried grape and fig, as well as a quantity of the best oil and wine; and this incident impelled the Gauls to cross the Alps and invade Italy. As the invasion took place towards the year 400 B.C. (Zeuss, *Die Deutschen*, p. 165. Contzen, *Die Wanderungen der Kelten*, p. 102, etc.; the earlier dating of Livy, whom Ottfried Müller and M. Duncker, *Origines Germanicae*, p. 14, were inclined to believe, is contradicted by Herodotus, who knows nothing yet of any Celts in Italy), the introduction of Italian metal-work would fall somewhere in the preceding one hundred years—say about a century after the founding of Massilia—the corn-cultivating stone age would lie beyond that. We know of nothing that history or the history of culture can say against that. Anyhow, when the Celts, after their great warlike migration to the East, gained settled habitations along the Alps, they became masters in smith-work; they were the forging "dwarfs" who provided the Germans and the whole North with swords, kettles, etc. The Noric iron was celebrated, and it is not surprising that several Teutonic words seem to betray a Celtic origin—words such as *eisen*, iron (Goth. *eisarn*, with the Celtic suffix *-arna*, see Schleicher in Hildebrand's *Jahrbücher*, 1, p. 410); as *beil*,

bill, axe (Old Irish *biail*, Old Cornish *bahell*, see Zeuss, ed. 2, 1061); as the Old High German *gêr*, spear, consequently Goth. *gaîs* (the Celtic Γαισάτοι, spearmen, see Zeuss, ed. 2, 53; the word is also Iranic, see Justi, p. 98, and perhaps came from an Iranian people); as *brünne* (Goth. *brunjo*, Slav. *brŭnya*, from the Old Irish *bruinne*, breast, belly, see Zeuss, ed. 2, 1058, *brú*, gen. *bronn*, see Stockes, Ir. Gl., No. 647, like *panzer*, coat of mail, Ital. *panciera*, from *pantex*, paunch). Nothing roams so easily as weapons and the names of weapons.

NOTE 21, PAGE 69.

A beautiful passage in Euripides' *Bacchæ*, 274, praises the gifts of Demeter and Bacchus, *i.e.*, bread and wine, as the best possessions of the human race.

NOTE 22, PAGE 70.

We can build very little on the passage in the Iliad, 7, 467, where Euneos—that is, the good sailor, the son of Jason—sends ships laden with wine from the Isle of Lemnos to the Greek camp, which take in exchange for their οἶνος bronze and iron, skins, oxen, and slaves, while the two Atridæ receive for their own share a thousand measures of μέθυ, because the later origin of this passage is evident. The word ἀνδράποδον belongs to Attic prose; Euneos, the Jasonid, is taken from Iliad 23, 747, etc. The distinction therefore between οἶνος and μέθυ is also without value.

NOTE 23, PAGE 70.

Maron himself is nothing but a mythic personification of the Ciconian town of Ismaros, which, with the omission of the *s* before *m*, and the addition of a suffix, was also called *Maroneia*, while a neighbouring lake bore the name of Ismaris (Herod. 7, 109). The son of the Thracian Eumolpus—*culturam vitium et arborum* (*invenit*) *Eumolpus Atheniensis*, Pliny 7, 199—was called Ismarus or, with assimilated *s* and a genealogical suffix, Immaradus. The names Ismaros, Ismaris, Immaradus, Maron, and Maroneia, contain interesting hints as to the laws of sound and of word-formation among the Thracians, and particularly the Ciconians.

NOTE 24, PAGE 71.

So we interpret βουπλήξ here, and not as a goad for driving oxen The bill, that primitive weapon derived from the stone-axe, and still

bearing its form, is in a fighting sense always the attribute of a barbarian (*Annali dell' instituto arch.*, pp. 339, 340, 1863). It is rare as a weapon in Homer; certainly in Book 15 of the Iliad the Trojans and Achæans fight—

ὀξέσι δὴ πελέκεσσι καὶ ἀξίνῃσι (v. 711);

but that is at the ship, which Hector has already grasped and hopes to set on fire, therefore man to man, hacking at each other as they would at timber or a sacrificial animal. And the Trojan Pisander once makes a stroke at Menelaus with the *ἀξίνη*, but is killed by him with the sword (Il. 13, 611).

NOTE 25, PAGE 72.

It is not venturing too much to suppose that Semelē, as a Thracian word, meant Earth, Earth-goddess. The root to which *χαμαί*, the Latin *humus*, etc., belong, begins with a sibilant in Zendic, Lithuanian, and Slavic (zemĭ, zemlia, etc.). In the same way the Thracian and Phrygian Sabos, Sabazios, the Macedonian Σανάδαι in Hesychius, etc., reappear in a surname of Dionysus, Ὗης or Ὑεύς, the *humid*, *fruit-bringing*, whose nurses too are the *Hyades*. There exists a Sabazios Hyes; and Semele herself is called Hyē by Pherecydes. Sabos and Ὗης are letter for letter the same word.

NOTE 26, PAGE 72.

The *βίβλινος οἶνος* in Hesiod, *Op. et D.*, 589, would lead to the same conclusion, in so far as it is derived now from Thrace, now from Naxos; Steph. Byz.: Βιβλίνη, *χώρα Θράκης· ἀπὸ ταύτης ὁ* Βίβλινος *οἶνος, οἱ δὲ ἀπὸ* Βιβλίας *ἀμπέλου, Σῆμος δ' ὁ Δήλιος τὸν Νάξιόν φησιν, ἐπειδὴ Νάξοι πόταμος* Βίβλος. If the name is derived from the Phœnician town of Byblus (Phœnician Gybl, that is, height, Hebrew Gobel, the town of the Giblites), as is indicated by a verse of Archestratus in *Athen.*, i. p. 28:

Τὸν δ' *ἀπὸ Φοινίκης ἱρᾶς, τὸν βύβλινον, αἰνῶ,*

then the variants *βύβλινος* and *βίβλινος* are both correct, as the Phœnician vowel can be rendered either way; not far lies the nasalized form *βίμβλινος* (in Hesychius). It is remarkable that we come across this wine afterwards in Sicily and South Italy; it occurred in Epicharmus; Theocritus mentions it (14, 15); the historian Hippys of Rhegium related that it was transplanted from Italy to Syracuse (*Athen.*, i. p. 81); and finally it is found on the first of the two Herakleote tables, if the

expressions *ἀ βυβλία* and *τὰν βυβλίναν μασχάλαν* are correctly explained by Mazochi, the editor and explainer of the inscription, as meaning "Byblic vine-plantation" (the Corp. Inscr. III., Nos. 5774 and 5775 agrees with him: "*Recte videtur Mazochius a vitis genere ex Byblo Phœnicia repetendo derivare, unde etiam βύβλινος οἶνος*"). However it does not seem to us probable that this name goes back to such a remote, long-vanished antiquity, or that it contains a reminiscence of the Byblian, which were the earliest of all the Phœnician colonies. It might be less fanciful to suppose a reference to the Byblus material, for Homer is acquainted with the same adjective *βύβλινος*; he applies it (Od. 21, 391) to a ship's rope, which was therefore made of papyrus-bast. It remains to be asked, how a kind of wine could be named from that material? Were the grapes dried on byblus mats and then pressed, yielding a kind of straw-wine, *vinum passum?* or did the vines climb up ropes of byblus, as in the neighbourhood of Brundusium in Italy at the time of Varro? The latter supposition would be supported by the words of Hippys of Rhegium, in *Athen.* i. p. 31: Ἱππίας (so he is called here) *δὲ ὁ Ῥηγῖνος τὴν εἰλεὸν καλουμένην ἄμπελον Βιβλίαν φησὶ καλείσθαι.* Or were the vines tied to their props with byblus bands, so that the grapes could develop more freely? Grotefend, in the *Annali dell' inst.*, vii. p. 275, and after him Göttling, derive also the Etruscan name of Bacchus, Fufluns, from *βύβλινος*; Corssen, in his *Sprache der Etrusker*, I, 314, rejects this combination, as a Greek and Latin initial *b* is represented by *p*, never by *f*. What the real facts were about the *Pramnian* wine, which served for mixing, and is twice mentioned by Homer (Il. 11, 638; Od. 10, 235), and whether that name signified a species of grape, or a mode of preparation, or a district, and if so, *what* district? was evidently as little known by later expositors as what the *βίβλινος* really was—although there is no want of conjectures and assertions (see particularly, *Athen.* i. p. 30), and this Pramnian wine is now and then mentioned in the post-Homeric time, for example, by the Comic poet Ephippus:

φιλῶ γε πράμνιον οἶνον λέσβιον

(*Athen.* i. p. 28). In remembering the Thracian, or properly Pæonian, mixed drink *παραβίη*, brewed from millet with the addition of *κονύζη*, mentioned by Hecatæus, we are tempted to suppose that the adjective Pramnian was only another form of the same Thracian or Phrygian word.

NOTE 27, PAGE 74.

If *οἶνος*, *vinum*, belonged, as Pott supposed, to the same root as *viere*, *vītis*, *vītex*, *vīmen*, *vitta*, *ἰτέα*, *ἶτυς*, etc., the Greeks and Latins

must have formed their name for wine out of a native root meaning to *twine*, by means of a participial *n*. But when we consider (1) that the beverage, both by the many processes of which it is the final result, and in its effects and properties, stands too far away from the plant itself to be named from its climbing nature; (2) that in the spread of this culture from one nation to another, the finished product is always introduced first and called by its foreign name, and the cultivation is not learnt till later—*after* which such words as οἴνη, οἰνάς, οἶναρον, etc., can be formed easily enough; (3) that the similarity of the Semitic name (yain, wain) can only be explained by supposing that the Greeks received the name together with the thing; it is more than probable that *vinum* only accidentally resembles *vitis*, that the former is a foreign word, the latter a native one with the meaning of "flexible plant" (see below, note 46). The Germans also borrowed the word for wine, but called the vine by a German word (O. H. G. *repa*). Curtius, No. 594, says: "Why the fruit of the vine should not originally have been called after the vine, is more than I can make out. The Lithuanian word offers a most striking analogy" (namely, *apvynys*, hop-tendril, plu. *apvynei*, hops). The analogy would be striking if in any language beer was named from the *prickly* nature of the barley-ear; as it is, that Lithuanian transition of meaning is much the same as is seen in *avizas*, oat-corn, plu. *avizos*, oats, and a hundred similar cases. Besides, *vinum* is not even alleged to be derived from *vitis*, vine, which might be thought possible, but immediately from a root meaning simply *to twine*.

Mommsen also, founding on a supposed affinity in the Sanskrit, thinks it probable that the primitive race migrating into Italy brought the vine with them (in several parts of his Roman History, especially 1, 173, of the second edition). But, as the cultivation of vines presupposes a very high degree of domiciliation, it is not reconcilable with the habits of a wandering horde. At the stage of warlike pastoral life, migration in mass is natural; at an advanced stage of agriculture, with property in the soil, and durable houses, it is extremely rare and only possible under very special circumstances; where trees and vines are cultivated, it is wholly inconceivable. Regard the Britons or Germans of Cæsar, their breeding of cattle, their incipient, half-nomadic agriculture, their food consisting of milk and flesh, their clothing of skins, etc. Can it be imagined that they could have cultivated vines, which need so much provident care, and so many appliances of civilization? They, who probably planted only spring-corn, for winter-sowing supposes too much of plan and calculation (Roscher, *Ansichten der Volkswirthschaft*, Leipzig and Heidelberg, 1861; *Ueber die Landwirthschaft der ältesten Deutschen*, p. 75. Von Sybel, *Kleine historische*

Schriften, p. 35, 1863), could they have meddled with vine-shoots, that only bear fruit after many years? And surely the wandering folk that invaded Italy had reached no higher stage of culture than the earliest Germans of history, but rather a lower; they brought with them cattle, swine, and stone axes, but assuredly no vines. The difference in the development of the great national groups of Europe only consists in their earlier or later entrance on particular phases of culture; the Greeks received their impulse from the East, the Italians from the Greeks; the Celts turned their attention to agriculture, and the building of towns, roads, and bridges, centuries later than the Græco-Italian nations, from whom they learnt much; again centuries afterwards, the Germans did the same, having meanwhile experienced the civilizing influence of the Celts; still later the Slavs, under the constant educating influence of the Germanic West. Make every allowance for difference of race and climate; yet climate itself imposes a gradual advance of the vine from the south-east, and forbids any idea of its having come down from beyond the Alps. We admit that, from the point of view of Roman documents and traditions, the cultivation of the vine in Italy looks very old; the only question is, how old? For the establishment of the Roman ritual, and for Italy in general—as seen from Rome—the period of Greek influence is quite an ancient, indeed a primitive, period. If the ancestral god of the Sabines, Sancus, was imagined as a vine-dresser, *viti-sator*, with a bent sickle, yet these same Sabines professed to be descended from Sabus the Lacedæmonian!

NOTE 28, PAGE 75.

The Greek word κάμαξ (already used by Homer and Hesiod) only meant the light, reed-like rod or pole along which the vines climbed, or were led from tree to tree; the vineyard on the shield of Herakles in Hesiod (v. 897) swings, with leaves and κάμακες, hither and thither:

σειόμενος φύλλοισι καὶ ἀργυρέῃσι κάμαξι·

and the ἐστήκει in the corresponding verse of the Iliad 18, 563:

ἐστήκει δὲ κάμαξι διαμπερὲς ἀργυρέῃσιν—

only means that canes were *stuck* in the ground in continuous rows to *support* the vines. And the later name χάραξ (from which Diez thinks the French *échalas* is derived), really a pointed cutting of a plant, was used originally in the sense of cane or shoot; the χάρακες, for example, which the five rich Corcyræans in Thucydides (3, 70) are said to have cut from the grove of Zeus and Alcinous, can only have been twigs, for when the culprits had to pay a stater for each, the fine was

thought excessive; and not many poles could have been cut down unobserved in a consecrated grove. The true Greek name for vine-pole would be πηδός or πηδόν (corresponding to the Lat. *pedare vineam*, *pedamentum*, *pedum*, the shepherd's-staff, etc., only with a lengthened root-vowel, like the Goth. *fôtus*, foot), but this word never became developed; it appears in Homer with the meaning, foot-end (blade) of an oar; in the passage (Il. 5, 838) where the beech-wood axle is spoken of, there is an old reading πήδινος instead of φήγινος (see Eustath. on the passage); and in Theophrastus, *h. pl.*, 5, 7, 6, Schneider has from manuscripts restored πηδός for the tree that axles and ploughs are made of (see Schneider on Theophrastus, *h. pl.*, 4, 1, 3).

If the Œnotrians were named after the vine-poles, the name of the oldest grape in Italy, the *vitis Aminæa* or *Aminea*, points in a singular manner to the Peucetians, a kindred nation to the Œnotrians. Philargyr. ad Virg. G. 2, 97: "*Aristoteles in Politiis scribit Amineos Thessalios fuisse, qui suae regionis vites in Italiam transtulerint, atque illis inde nomen impositum.*" To this we add the gloss of Hesychius: ἡ γὰρ Πευκετία Ἀμιναία λέγεται. Also, according to Macrobius (*Sat.* 3, 20, 7), the Aminean grape was called after a certain district: "*Aminea, scilicet e regione, nam Aminei fuerunt ubi nunc Falernum est.*" Galen in two passages places the Aminean wine, which he calls watery, ὑδατώδης, and light, λεπτός, in the neighbourhood of Naples (*De methodo medendi*, 12, 4: ὅ τε Νεαπολίτης ὁ Ἀμιναῖος, ἐν τοῖς περὶ Νεάπολιν χωρίοις γενόμενος· *De antid.*, 1, 3: ὅ τε ἐν Νεαπόλει κατὰ τοὺς ὑποκειμένους αὐτῇ λόφους, Ἀμιναῖος μὲν ὀνομαζόμενος κ. τ. λ.). Accordingly Voss, in the passage just quoted from Macrobius, corrected Falernum into Salernum (in which Val. Rose, *Arist. pseudepigr.*, p. 467, seems to agree with him), and supposed that the Peucetia of Hesychius meant the country of the Picentines south-east of Naples. But the Aminean grape was quite at home in Campania proper. When Varro calls the *vitis Aminea* also *Scantiana* (*De r. r.*, 1, 58, Pliny 14, 47), this word must be derived from the *silva Scantia*, which lay in Campania. In ancient as in modern times the vine in Campania was trained high on the trees, and the Aminean vine was a decided *vitis arbustiva*. This is plainly proved by the descriptions of Columella, 3, 2, 8–14, and Pliny, 14, 21, and by directions in the Geoponica, 4, 13, 5, 17, 2, 5, 27, 2. So the Aminean grape might originally belong to the district in which Aminean wine grew in Galen's time. Afterwards, it is true, the Peucetians, the *fir*-folk, were imagined as living in another place; but the name is an appellative, with which the idea of woods and trees was associated, and in Cicero's time Campania did not want for woods, as is proved, not only by the above-mentioned *Scantia*, but by the *silva Gallinaria* on the R. Volturnus, a wood of firs that still exists. Its Thessalian

origin means no more than that this grape goes back to the oldest time of the Greek settlement. Again, when we read in Hesychius *μόργιον· εἶδος ἀμπέλου*, and call to mind the kind of grape named *Murgentinum* by Cato, we find the Morgetes, whose name seems formed from the measure of land apportioned (*μείρομαι*, *μοῖρα*, with the *i* thickened into *g*), connected with the cultivation of the vine. Much antiquity is to be found in the numerous names for different kinds of grapes. The name of the *visula*, for example, is probably founded on the Greek *οἶσος*, *οἰσός*, *οἶσον*, *οἰσύα* (the Adj. *οἰσύϊνος* already used by Homer), Fr. *osier*, Bret. *oazil*. Might the *spionia* or *spinea*, which was native to the district about the mouths of the Po, be derived from the Greek *ψίνομαι*, *ψινάς*, as it would be too bold to think of the time-honoured city of Spina?

It is remarkable how the various methods of planting and nursing the vine according to the district have been retained from early antiquity down to the present day. In Provence the vine is trained now just as it was by the Phocæans; the similar Catalonian method is derived from the settlements of the Massaliotes; in Tuscany and the Campagna of Naples, south of the Volturno, the vine grows on tall elms and poplars; in Lombardy it twines in festoons (*rumpi*, *traduces*) on small elder-trees (*opulus*, the same as *populus* in the Celtic pronunciation, with initial *p* dropped, as in *athir*=pater, *iasg*=piscis, etc.); in the Alpine valleys it forms wide bowers upborne by columns—all just as it was in the time of Varro, Pliny, and Columella. Unger and Kotschy, in *Die Insel Cypern*, p. 449, describe the cultivation of the vine in the Levant: "The young vine has to live, bear grapes, and ripen them, without support, for whence are the wooden props to come which lighten the weight of the fruit in our vineyards? There is no material for such support, either in the Ionian Isles, in all Greece, Syria, and Palestine, or in this island (Cyprus). Whoever travels in the East where the vine cannot obey its natural impulse and crown the tree-tops, gets used to seeing it a *planta humifusa* in the deepest dejection and slavery."

NOTE 29, PAGE 79.

Portugal experienced something very similar as late as the second half of the eighteenth century. That country, fallen into the deepest economical distress, had no source of profit save in the production of wine; and vine plantations, on favourable soil and on unfavourable, had supplanted agriculture throughout the land. The minister Pombal gave orders to uproot the vines and sow corn in whole districts, especially in the valley of the Tagus. The order was executed, for the masterful reformer brooked no contradiction. Other paternal

governments have aimed at the same objects by less startling methods, by screwing up taxes, by bounties, prohibitions, and differential duties. How young after all are the elementary notions of National Economy, which will one day be extolled as the greatest benefactress of mankind!

NOTE 30, PAGE 80.

Strabo tells us of a singular precursor of Islam among the Getæ (7, 3, 11). This people, like the Scythians and Thracians, and afterwards the Slavs, was notorious for its drunken habits, which prevented all political or warlike development. But, not long before the time of Strabo (or, as Jornandes 11 reports after Dio Chrysostomus, during the dictatorship of Sulla), there arose among them a magician of the name of Decæneus, who had travelled much in Egypt and there learnt the art of prophecy, and who gained an extraordinary influence over his countrymen. They obeyed him so blindly that, at his behest, they uprooted all the vines in the country and thenceforward lived without wine. This occurred during the reign of King Bœrebista, who, with the intention of making his people brave, followed the same method, and, victorious on all sides, actually founded a mighty Getic empire, until parties rebelled against him and the Getic power again declined. Whether the virtue of temperance endured longer, and whether Decæneus, like Mohammed afterwards, allowed or even favoured polygamy in compensation for the prohibited wine, is not stated. The Thracians, Getæ, and Dacians were a race of unbridled sensuality, which, however, as Müllenhoff remarks (article GETÆ in the Encyclopædia), was checked from time to time by an ascetic reaction nourished by a belief in ghosts.

NOTE 31, PAGE 82.

The Provençal and French word *tona*, *tonne*, which is also found in the Wallachian, and has passed into all the Celtic and Germanic tongues, but is characteristically wanting in Italian, must be derived from one of the Alpine languages, either the Ligurian or the Rhætian. In Latin and Italian there is a word with another root-vowel—*tina*, wine-tub. Strabo says, that in Cisalpine Gaul, besides pitch-boileries (in the wooded spurs of the Alps), there were used immense wooden casks, as big as houses, to hold the wine (5, 1, 12 : *τὸ δ'οἶνον τὸ πλῆθος μηνύουσιν οἱ πίθοι· οἱ ξύλινοι γάρ μείξους οἴκων εἰσί*). Further (5, 1, 8), that the Illyrians brought their wine from Aquileia in wooden casks, *ἐπὶ ξυλίνων πίθων*.

With the wooden vessels appeared another far-spread word, *daube*, stave, *dauge*, etc., which runs through all the Romance and Slavic

languages, and is not wanting in the Magyar, Albanian, Wallachian, and Modern Greek. Diez traces all existing forms of the word to a Low-Latin *doga*, which itself was derived from the Greek δοχή. The word has passed into the Germanic languages only here and there, but flourishes abundantly in the Slavic both as to forms and meanings; being, for instance, applied to the rainbow (see Miklosich, *Die Fremdwörter in den Slav. Spr.*, p. 83), whence, as a derivative adjective, it gets the meaning of *many-coloured*. The centre of diffusion for this word is the wooded regions of the Danube, and there too the thing was native; but it is quite possible that it was derived from a Græco-Latin expression, perhaps used in the technical and commercial language of Aquileia. To this day the wood that is used for the barrels sent to the East comes mostly from Hungary, and the hoops made of *corylus Pontica* are imported by way of Constantinople.

A third expression, much used in the richly-wooded Romance countries, and far-spread on every side, is *cupa*, originally a Greek word (κύπη). When Maximin, in the year 238, was about to besiege Aquileia, but could not get his army over a tearing rain-swollen river, he was assisted by the extensive wine-trade of the place, for he found a quantity of large empty wine barrels, of which he built a bridge (Herodian, 8, 4, 9: ὑπέβαλόν τινες τῶν τεχνικῶν, πολλὰ εἶναι κενὰ οἰνοφόρα σκεύη περιφεροῦς ξύλου ἐν τοῖς ἐρήμοις ἀγροῖς, οἷς ἐχρῶντο μὲν πρότερον οἱ κατοικοῦντες εἰς ὑπηρεσίαν ἑαυτῶν καὶ παραπέμπειν τὸν οἶνον ἀσφαλῶς τοῖς δεομένοις). Jul. Capitolinus, reporting the same event, calls these enormous casks *cupæ* (Maximin. 22: "*Ponte itaque cupis facto, Maximinus fluvium transivit, et de proximo Aquileiam obsidere coepit*"). The Massilians must also have possessed such barrels, for when Cæsar besieged their town, they rolled them, filled with burning tar and pitch, down from the walls upon the enemy's trenches (*De B. Civ.*, 2, 11: "*Cupas taeda ac pice refertas incendunt, easque de muro in musculum devolvunt*"), just as the inhabitants of Uxellodunum in Aquitania had done before in a smaller case (*De B. Gall.*, 8, 42: "*Cupas sevo, pice, scandulis complent; eas ardentes in opera provolvunt*"). From the island near Salona, where the poet Lucan makes the Cæsarians to be blockaded, these try to get away to the Illyrian mainland by night on rafts made of empty wine-barrels (4, 420: "*Namque ratem vacuae sustentant undique cupae*"); of which, in that vine-country, where the mountains were still covered with forest, there must have been plenty. The workman who furnished the vine-dressers and merchants with such *cupae* was a *cuparius*, as we see, for example, from an inscription at Treves—Orelli, No. 4176: "*Cuparius et saccarius*" (a man who also made sacks, and therefore worked for the freight-trade in general). Among the barbarians the *cupa* was also used for beer; and we learn

from various passages in the Roman law-books that it was also used to hold corn and flour. The article *coppa* in Diez gives a brief picture of what became of the word during the Middle Ages and in the modern Latin languages: what had originally meant coop or vat took the meaning of cup and bowl, head and tuft, mountain-top and vaulted dome. In German not only *kübel* and *kuppel* (tub and dome) are derived from this word, but also *kopf*, for in primitive fashion bowl and head or skull are similarly named, and the name of the vessel passes to ship and boat, cabin and coffin. The Greek *βοῦτις*, *βούτιον*, *βύτις*, *βυτίνη*, corresponding to the Latin *cupa*, *cuppa*, has a similarly varied application and extent throughout North Europe, and is still heard in the German *bütte*, tub, *böttcher*, cooper, in the French *botte*, boot, *bouteille*, bottle, etc. From the same root probably comes Old Irish *bothan*, hut, *both*, house, Pruss. *buttan*, and Lith. *buttas*, house, and even the German and Slavic *bude*, booth.

Our *ohm*, formerly *ahm*, awme, is the borrowed Greek *ἄμη*, Latin *hama;* our *seidel*, pint, is the Latin *situla;* our *flasche*, bottle, probably, in the last instance, the Latin *vasculum*, though now it generally means a glass vessel. *Glass* also, like *wood*, is a substance that first became an article of universal daily use in the North, and in post-Roman times; from the *wooden* cask we tap the wine into *glass* bottles, which we close with *cork* stoppers. The first, the bottles, are scarcely older than the fifteenth century (see Beckmann, *Beiträge*, ii. p. 485); the art of closing the narrow mouth of a vessel with the elastic bark of the cork-oak cannot be very ancient, and only became common during the last few centuries, and that very slowly. The cork-oak, *quercus suber*, probably exists no longer in Greece; it was rare there even in the olden time; it is a tree belonging to South-Western Europe and the opposite shores of Africa. It cannot with certainty be recognised among the varieties of oak mentioned by Theophrastus: the tree that when stripped of its bark thrives all the better, he places in Tyrrhenia, *i.e.*, towards the west; but, at the same time, he observes that it sheds its leaves in winter, which is calculated to puzzle us again (*H. pl.*, 3, 17, 1). Pausanias (8, 12, 1) mentions among the oaks of Arcadia, one whose rind is so light and loose that it is used as floats for anchors and nets—evidently the cork-oak; but his description shows that it was a natural wonder with which his readers were unacquainted. The Romans had an individual name for the cork-oak, *suber*, which distinguished it clearly from all other forest-trees. We already hear of the bark in the story of Camillus. Camillus was to be named dictator, but a decree of the Senate, then shut up in the Capitol by the Gauls, was necessary. A youth called Pontius Cominius undertook to carry the message. As the bridge over

the Tiber was watched by the enemy, he swam at night across the river, supported by pieces of cork (Plut. Cam. 25, 3 : τοῖς φελλοῖς ἐφεὶς τὸ σῶμα καὶ συνεπικουφίζων τῷ περαιοῦσθαί πρὸς τὴν πόλιν ἐξέβη). The custom of closing vessels with resined cork was derived, it seems, from the Gauls. Colum. 12, 23 : "*Corticata pix qua utuntur ad condituras Allobroges.*" Cato, 120, prescribes : "*Mustum si voles totum annum habere, in amphoram mustum indito et corticem oppicato, demittito in piscinam;* that is, to keep the must fresh the whole year, the mouth of the amphora is to be closed with cork and pitch, and the vessel then kept at the bottom of the tank. In Horace, the wine-containing amphora is secured with a "cork made tight with pitch." Od. 3, 8, 9 :

> "*Hic dies anno redeunte festus*
> *Corticem adstrictum pice demovebit*
> *Amphorae fumum bibere institutae*
> *Consule Tullo.*"

Pliny speaks more plainly as to the use and utility of the rind of the cork-tree : 16, 34 : "*Usus ejus* (*suberis*) *ancoralibus maxume navium* (buoys, for which light wood is now generally used), *piscantiumque tragulis* (floats for fishing-nets), *et cadorum opturamentis* (bungs for casks), *praeterea in hiberno feminarum calciatu* (soles to put in slippers, such as are still used)." Notwithstanding all this, what we understand by corking was rare among the Romans, who generally used pitch, plaster, wax, etc., and poured oil on the top of that, still a frequent practice in Italy, to preserve the liquid from the air; the shape of the earthenware vessels, their larger size and wider opening were not well suited for closure by a cork. This state of things remained much the same during the Middle Ages. Barrels were bunged with wooden plugs ; smaller vessels of earthenware, tin, or wood, to be slung round the neck or waist when hunting or travelling, and the silver or gold bottles of the higher classes were plugged or screwed tight with stoppers of the same material, or with wax, etc. The invention of the narrow-necked and cheap glass bottle, and the extension of trade first caused the cork (from *cortex*, but probably through the Spanish *corcha* ; the French *liège*, the *light* material, is from *levis*) to come into general use, and it now seems to us indispensable in the preservation of fine wines.

NOTE 32, PAGE 86.

At another festival, held about the same time, the Thargelia, the two φαρμακοί, who were led to death as an expiatory sacrifice, were hung one with white and the other with black figs, and were scourged

with fig-rods (A. Mommsen, *Heortologie*, p. 417). It was an ancient Ionic festival, but what was meant by the fig is doubtful.

NOTE 33, PAGE 87.

The *Ficus Ruminalis*, so called after Jupiter Ruminus and the Diva Rumina, whose names again were derived from *ruma=mamma*, symbolizing fertility and procreation; see Preller, *Röm. Mythol.*, p. 368, and Corssen, *Kritische Beiträge*, p. 429. The custom of making figures of Priapus out of the wood of the fig-tree belongs to the same circle of ideas. A variation of an old legend in Strabo (Hesiod, *Fragm.* clxix., Göttling) shows how the *fig-tree* and the *swine* had the same value as images of exuberant creation. Hesiod related that Calchas at Colophon asked Mopsus, the grandson of Tiresias, how many figs there were on a fig-tree standing before them; Mopsus having stated the number and measure correctly, Calchas died with the painful impression of having met with a more excellent seer than himself. Pherecydes told the same story, only that instead of the quantity of fruit on a fig-tree, the question was about the number of pigs to which a sow that lay before them would give birth. From this it has been supposed that σῦκον and σῦς, a sow, were derived from the same hypothetical root *su*, to generate; and that *ficus*, too, was analogous to *fieri*, φύειν. But this etymology cannot be trusted, because the date of the introduction of the fig among the Greeks and Romans is too late to admit of such primitive formations. Benfey (1, 442) presumes that the Greek word was borrowed from the East, and appeals in proof to συκάμινος. The Latin form shows that a digamma had stood after the σ, from which proceeded the long vowel ῡ; *ficus* arose out of σϝικον, like *fides* from σφίδες, and as *fallere* is the same as σφάλλειν, *fungus* as σφόγγος, etc. As the Thebans said τῦκα for σῦκα, and the Syracusan quarter Συκῆ seems also to have been called Τυκῆ, from which arose by a misunderstanding the later Τύχη, as though it meant "fortune"; Ahrens (*De Dial. Dorica*, p. 64) thinks the original form was τϝικον. Or did the Greeks pronounce the foreign consonant sometimes as *s*, and sometimes as *t*, like *Sor*, *Sar*, and Τυρος, Tyre? That in the north of the Greek peninsula the first letter of the kindred word σικύα (for συκύα, συκία?) was also pronounced τ, may be concluded from the Slavic *tykva*, pumpkin, which the Slavs doubtless got from the region of the Danube. The Gothic name for fig, *smakka* and the Slavic *smokva*—on the strength of which Kuhn (*Zeitschr.*, 4, 17) assumes a primitive form *sϝakva* for the Greek also—is probably only a corruption, as the long ῡ did not fit into the Gothic system of vowels, unless the change had already taken place in the language of

the northern tribes of the Balkan peninsula, which passed the word on to them. To say *m* for *b* was a barbarism (Steph. Byz. : *Ἀβάντις· τὸ Αβαντία θηλυκὸν, ὅπερ κατὰ βαρβαρικὴν τροπὴν τοῦ β εἰς μ Ἀμαντία ἐλέχθη παρὰ Ἀντιγόνῳ ἐν Μακεδονικῇ περιηγήσει*). So *Ἀμυδών* (a town of the Pæonians already in Homer) alternated with *Αβυδών*, the *Ἀλμήνη* in Ptolemy is perhaps for Albania, the river *Βόγγρος* in Herodotus is afterwards called Margus, now Morawa, Bellerophontes in Italian becomes Melerpanta, etc. Also *p* and *v* become *m*: *ἀπαλός* was called in Macedonian *ἀμαλός*, the river Tilaventum is the modern Tagliamento, etc. So the original digamma in *σῦκον* might meet the Goths when they came to the Danube in the shape of an *m*, with the auxiliary vowel *a*. The Wends, who lived next behind the Goths, could have only received the fig, in a dried state of course, from the Goths; therefore the Slavic name (Old Slav. *smokŭvĭ*, *smoky*, *smokva*) was merely borrowed from the Gothic at a time when the assimilation of *kv* into *kk* had not yet taken place. We must add that the *wild* fig-tree *ἐρινεός*, from which the cultivated fig cannot be derived, is heard of already in Homer, and that its name is perhaps etymologically identical with that of the fruit, *ὄλυνθος*.

NOTE 34, PAGE 99.

A. de la Marmora (*Itinéraire de l'île de Sardaigne*, 2, p. 353, Turin, 1860) says of the Sardinian olive : "*On s'exprimerait mal, à mon avis, si l'on voulait parler de l'introduction qu'on y aurait faite de cette plante, puisque ce pays est visiblement sa patrie naturelle.*" This remark of the eminent naturalist, though historically incorrect, proves how luxuriantly the tree thrives in its newly-conquered European sphere of culture. In Corsica too there are splendid groves of olives now, and yet the Romans had much trouble in transplanting the tree thither. Nay, if we may believe Seneca's rhetoric, there was no cultivation of it at all in the wild island in his time (*Epigr. super exilio*, 2, 3, 4 :

> "*Non poma auctumnus, segetes non educat aestas,*
> *Canaque Palladio munere bruma caret*").

Even in Sardinia the government found it advisable to promise a title to any one who should cultivate a number of olive-trees, just as the Venetians were obliged to encourage the same cultivation in their Greek possessions by rewards. The wild olive-tree, says La Marmora in another place (*Voyage en Sardaigne*, 1, 164, ed. 2), covers immense spaces in the hilly region of the island, and only awaits inoculation to bear splendid fruit. But, we may ask, Is the tree really wild there, or

only *gone* wild? After two and a half millenniums and the unspeakable miseries of war that filled them, the latter supposition is certainly not too bold.

NOTE 35, PAGE 109.

Among the Arabs in Africa the date-palm is spared during devastating inroads into the enemy's country. G. Rohlfs (*Afrikanische Reisen*, p. 70, Bremen, 1869, ed. 2): "The fields were wasted, the water-channels destroyed, the ksors (villages) everywhere strongly barricaded from without, the fruit-trees felled; only the olive, which is always respected, lifted its crown sorrowfully above the deserted fields, where for two months men had daily murdered each other for nothing" (p. 186); "Mussulmen think it one of the greatest crimes to cut down a palm-tree. When the Hadji Abd-el-Kader related his heroic deeds, he asked me, Was I right to fell the palm-trees of my enemies? I answered, No; for here in the desert the palm is the only sustenance of man. This answer pleased him; he said that until then every one, even the Tholbas, had told him he was right, while an inner voice upbraided him with having done a great wrong."

NOTE 36, PAGE 110.

The Greek ὄνος, Lat. *asinus*, we agree with Benfey in deriving from a Semitic word corresponding to the Hebrew *athôn*, she-ass; where, in the Greek word, the sibilant arisen out of the dental *th* is supposed to have dropped out before the *n*. From the Latin are further derived the Gothic *asilus*, Lithuanian *asilas*, and Slavic *osĭlŭ*. Herodotus expressly says that there were neither asses nor mules in Scythia, the country being too cold for those animals (4, 129: διὰ τὰ ψύχεα), and he adds that the Scythian cavalry were repeatedly forced to retreat by the voices of the asses in Darius's army. Aristotle confirms this, with the addition, that it was also too cold for the ass among the Celts beyond Iberia—*De animal. generat.*, 2, 8: διόπερ ἐν τοῖς χειμερινοῖς οὐ θέλει γίνεσθαι τόποις διὰ τὸ δύσριγον εἶναι τὴν φύσιν, οἷον περὶ Σκύθας καὶ τὴν ὅμορον χώραν, οὐδὲ περὶ Κελτοὺς τοὺς ὑπὲρ τῆς Ἰβηρίας· ψυχρὰ γὰρ καὶ αὕτη ἡ χώρα. So in *Hist. anim.*, 8, 25: δυσριγότατον δ' ἐστὶ τῶν τοιούτων ζῴων· διὸ καὶ περὶ Πόντον καὶ τὴν Σκυθικὴν οὐ γίνονται ὄνοι. Not otherwise Strabo, 7, 4, 18: ὄνους τε γὰρ οὐ τρέφουσι (δύσριγον γὰρ τὸ ζῷον); and Pliny, 8, 167: "*Ipsum animal* (*asinus*) *frigoris maxume impatiens, ideo non generatur in Ponto.*" As the ass is not so much a gregarious as a domestic animal, and his business chiefly consists in carrying burdens hither and thither within the limits of human settlements (hence Italian *somaro*, ass, literally sumpter-beast; Mod. Greek γομάρι

from γόμος, burden, load), he cannot have taken any part in the earliest migrations of Indo-European pastoral tribes. The word will have reached the Lithuanians through neighbouring German tribes, perhaps at an early time, for instance, that of the Gothic king Ermanarich, for, like the pedlars from the South, mountebanks with asses bestridden by apes wandered through the barbarous countries ; the first Christian missionaries may also have spread the knowledge of the animal, for the ass was frequently mentioned in the Bible stories, and may have been represented in rude pictures illustrating the sacred history. The Slavic name is also of Gothic origin. But the Gothic *asilus* itself is directly derived from the Latin, not from *asellus*, which form is wanting in the Romance tongues, showing it was not popular, and is also accented contradictorily ; but from *asinus* with the very common change of *n* into the *l* more facile to the German tongue. So out of the Latin *catinus* was made the Gothic *katils*, Slav. *kotĭlŭ*, kettle ; from *lagena* the O. H. Germ. *lagella*, Mid. H. Germ. *lägel*, little pot ; from *organum* the German *orgel*, organ ; from *cuminum* the O. H. Germ. *chumil*, cummin. Some Teutonic languages have a by-form in which the Latin *n* is retained. Of the Celtic *assal*, Stockes (Irish Glosses, 296) also thinks that according to the laws of sound it can be no native word, but must be derived from the Latin ; in a later passage (p. 159) he adds that even ὄνος and *asinus* seem to be of Oriental and not of Indo-European origin. In the so-called Terramara-beds of Parma, which belong to the bronze age, none but doubtful bones of asses were met with, and those only in the upper strata (*Mittheilungen der Antiquarischen Gesellsch. in Zürich*, vol. xiv. p. 136). Therefore the ass appeared later than bronze in that part of Italy.

Note 37, page 112.

The Homeric ἡμιόνων ἀγροτεράων can only mean—reared on the pasture, in free herds, not yet tamed. Such young animals came from the Eneti, and were then broken in by the owner, just like horses. Modern exponents of Homer consider the mule, that mongrel between horse and ass, to be a natural *wild* race of animals ; or they remind us of the *equus hemionus* of the zoologists, the jiggetai in the deserts of Asia, which must have been imported, I suppose, to adorn the zoological gardens of the Trojans ! But the onagri which Liudpraud, on his embassy of the year 968, saw on a marsh at Constantinople, may have been real jiggetais. Unfortunately, Liudpraud had not enough interest in the matter to inquire of the keepers whence these wild asses came, or to describe them more closely.

The Latin *mŭlus* is probably derived from the Greek μυχλός, breeding-

ass, where the omission of the χ is reflected in the length of the vowel. Μυχλός was, according to Hesychius, a Phocæan word, and the Phocæans were the mariners and colonizers of the West. The Albanian (also Wallachian) *mushke*, and the Slavic *mĭskŭ*, *mĭsgŭ*, *mĭshte*, which cannot be derived from *mesiti*, *meshati*, to mix, must come from μυχλός; it is wanting in Polish and Lithuanian, and will be a Thracian form of word. The modern Russians have derived both their expressions for mule, *ishak* and *loshak*, as well as their name for horse, from the Tartars. If the language of the great Thraco-Illyrian race—which must very early have introduced a great many ideas of culture into the North—had been preserved to us, we should have a far clearer insight into the primitive history of Europe. Much that now deceives us with the semblance of original affinity would prove, we believe, to be the migration of culture. The two names for ass, horse, or mule, *mannus* and *buricus*, whose varied forms Diefenbach (*Origines Europaeae*, p. 378) has collected, seem to be of Celtic or Iberian origin. What if they be simply popular corruptions of ἡμίονος and ὀρεύς (with digamma represented by *b*), and had penetrated into the Ligurian and Iberian west, by way of Massilia and the Spanish-Greek towns, together with the animal itself? The Latin *hinnus* for the offspring of a stallion and she-ass (Varro, *De r. r.*, 2, 81: "*Ex equa enim et asino fit mulus, contra ex equo et asina hinnus*") is likewise of Greek origin —ἵννος, ἴννος, γίννος. If the γ here answers to an old digamma, the migration of the word to Italy must be ascribed to a comparatively late period, which is likely enough from the nature of the case, as this kind of coupling was less common.

NOTE 38, PAGE 113

The Greek αἴξ, αἰγός, goat, is found again in Sanskrit and Lithuanian, and therefore goes back to the time before the separation of the nations. It does not necessarily follow that the primitive race already possessed the goat as a domestic animal; it might call any leaping animal of the chase by a name that afterwards passed to the tame goat when that became known—a possibility which should be more frequently considered in similar cases by those who so boldly infer the state of culture of the primitive stock from the existence of certain words common to all races. Movers, following very different traces and combinations, tries to prove the origin of the goat in the mountainous part of North Africa (ii., 2, p. 366). The ancients now and then mention wild goats in Greece and Italy. But goats easily run wild, and then multiply rapidly. In the seventeenth century all the inhabitants of the Isle of Cerigo were either murdered or carried off

by the Turks, and their dwellings burnt down. Only a few goats escaped. Fifteen years later these had increased to many thousands, but had become as wild as chamois (Beckmann, *Literatur der älteren Reise-beschreibungen*, 1, 547). La Marmora had heard a great deal about the wild goats on the little island of Tavolara, near Sardinia, an island which is nothing but an immense block of limestone. When, not without trouble and danger, he had killed a few of these animals, examination proved that the so-called wild goats were nothing but tame animals run wild (*Voyage en Sardaigne*, i. p. 174, ed. 2.). But it is certain that on the rocky labyrinths of the Greek islands, and of Sicily, Sardinia, and Calabria, as well as in Palestine and on the Atlas, the goat feels more at home, yields more milk, and is better grown than in the foggy, grassy, and woody lowlands, on which in the primitive time the Germanic and Lithuano-Slavic races pastured their oxen.

NOTE 39, PAGE 113.

The South-east of Europe, the slopes of the Carpathians and the neighbouring plains were from the very beginning one immense forest of lime-trees, which furnished even in historic times an immeasurable quantity of honey, and in which the Slavs, who moved into them, dwelt and feasted. As the culture of the soil advanced, every bee-master had his fixed portion of the wood, and the honey-trees were marked. Only at a late period did bee-hives, *alvei*, *alvearia* (Middle Latin *apile*, Lithu. *avilys*, Slav. *ulei*, in Hesychius ἀπέλλαι=σηκοί) become common near the houses and in the gardens, while the forest retreated. In Lithuania and Russia the collecting of honey in the woods continued to be the rule down to a late period. Strahlenberg (*Das nord- und ostliche Theil von Europa und Asia*, p. 333, 4°, Stockholm, 1730): "In Lithuania and in many parts of Russia bees are not so often kept near the house in baskets, or in hewn blocks of wood or hives, as out in the woods on the highest and straightest fir-trees, near the tops of them," etc.; after which the author relates that the Dorpat peasants (in Livonia) had in old times made a contract with the citizens of Pleskau "that they might keep their stock of bees in the woods of Pleskau;" "but when these woods were ruined and cut down, the practice ceased." This keeping of forest-bees was the business of the bee-master (Russian *bortnik*, Polish *bartnik*); in the course of centuries it had retired from Gaul, where it must once have flourished, to Germany, where the bees belonged to the Mark, and the law-books give decisions on the bee-pasture; and then farther to North-eastern Europe, where it was preserved the longest.

NOTE 40, PAGE 117.

Bacmeister, *Alemann. Wander.* 1, 61: "*Mauer* and *Zimmer* in names of places show the same antithesis of Roman and German. The German raised no *muri* of stone, he *timbered.* The word *mauer* (O. H. G. *mûra*, M. H. G. *mûre*) he learnt, with the mason's art, from the Romans; and in many names, though not in all, it takes us back to real Roman works. The Gothic Bible renders 'foundation' and 'town-wall' by *grundu-vaddjus* and *baurgs-vaddjus.* This *vaddjus* (fem.) is our *Wand*, connected with Goth. *vidan* (*vadjan*) to bind, and must have meant a wattled fence (Tac. Germ. 16). To build is in Gothic *timrjan.*"

In the text we could only touch in passing upon the Art of Building, though the most fruitful points of view would be opened out by a closer examination. Whence, for example, is derived the Gothic *razn*, domus? Another unsolved riddle is *hûs*, house (Fick, 247, says the Old Norse *hûs*, domus, is identical with Old Norse *haus*, cranium; Grimm, that it corresponds to Lat. *cūria;* the Dictionary, that it is from the root *ku*, *sku*, to cover: the Slavic *khizha*, hut, must be borrowed); we believe it to be a word borrowed from an Iranian language (compare Lerch, *Forschungen*, pp. 88 and 103), as the much-debated *god*, Gothic *guth*, must also be derived from the same source. The Iranian races on European soil must have had a greater influence on culture and religion, and have left more traces in the languages, than has hitherto been noticed. As, according to Tacitus, the Slavs had adopted many Sarmatian customs, and, for example, exchanged their old name for God for that of the Iranian one, it is improbable that the Germans could remain uninfluenced. Not all Scythians were Nomads; some among their divisions, the Σκύθαι ἀροτῆρες and γεωργοί, cultivated the ground and traded in corn. The early colonies on the Pontus must have had as educating an influence upon them as Massilia had on the Celts; and it is clear enough from what Herodotus says that the countrymen of Anacharsis had at least a developed system of deities. Later on the Quadi and Jazyges, the Goths and Alani, were comrades in war, and are often named together (Amm. Marc., 17, 12: "*Permistos Sarmatas et Quados, vicinitate et similitudine morum armaturaeque concordes*"). And Vannius, king of the Suevi, who ruled under the Roman Senate for thirty years, kept a Sarmatian and Jazygian cavalry.

NOTE 41, PAGE 121.

Niebuhr, *Beschreibung von Arabien*, p. 57, 4°, Copenhagen, 1772: "They have a thick white drink, *busa*, which is prepared from flour.

. . . In Armenia it is a drink universally known. There it is kept *in large pots in the earth, and is commonly drunk out of these pots by means of a reed.*" Then in a note: "*Busa* seems to resemble the drink called by the Russians kisly-shchi, or that which they call kvass." But the latter are not intoxicating, as the drink described by Xenophon was.

NOTE 42, PAGE 128.

The δονέουσι of Herodotus is still found in the interior of Asia Minor. A trunk of a tree hollowed out like a tube is closed at each end with a board, and has a hole at the top. This vessel hangs by two strings, and is swung backwards and forwards by a young girl till the butter comes. See the picture in Van Lennep's "Travels in Little Known Parts of Asia Minor," 1, p. 131, London, 1870.

NOTE 43, PAGE 133.

If Parthey's assertion (in his edition of Plut. *De Iside et Os.*, p. 158) is correct, that on the oldest mummies of all, the wrappages are of sheep's wool, and that linen bands only come in with the twelfth dynasty, after which they become universal, it proves that even in Egypt flax was a comparatively young product of culture. This we should be obliged to assume even without direct historical evidence, for Egypt, when first taken possession of, was certainly a pastoral land, a land of νομοί, for which it was destined by nature; the only thing to be remarked is, that according to that the practice of embalming, the development of a higher political order, etc., preceded a knowledge of the flax plant. We are told that pieces of linen were found in an Old Chaldæan grave, therefore of a time that is supposed to have preceded the kingdom of Babylon (*Journal of the R. Asiatic Society*, vol. xv. p. 271: "Pieces of linen are observed about the bones, and the whole skeleton seems to have been bound with a species of thong"). But was it really linen, and not a web made of some bast-like plant?

NOTE 44, PAGE 133.

The number of threads, 360, evidently answered to the number of days in the oldest year (Peter von Bohlen, *Das alte Indien*, 2, p. 270). The Egyptian was buried so deep in symbolism, that to him nothing was unconnected with religion; the realest thing that can be, the practical technics of handiwork, he sanctified by mysticism, and linked it with heaven. What the political and scientific romanticists

of the nineteenth century have sought for and demanded, "a Christian State, Christian national economy, Christian astronomy," etc., actually existed in ancient Egypt. Goethe (*Farbenlehre, Zur Geschichte der Urzeit*): "Stationary nations handle their technics with religion." But it is interesting that in Pliny's report, five hundred years after Herodotus, the number 365 already appears instead of 360, a silent correction of the legend, which at the same time confirms the above explanation. The two Egyptian measures, called *hinn* and *kiti*, were also each divided into 360 parts (Lepsius in the *Zeitschrift für Ægyptische Sprache*, p. 109, 1865), a mystico-religious arrangement, as the subdivisions were too small for practical use. The art of weaving, where two opposite movements by intercrossing beget a third thing, afforded to the mythic phantasy of the oldest times a picture of two natural powers, one conceptive, the other generative, and their fruitful combination.

NOTE 45, PAGE 134.

If the Colchian linen had come by way of the Lydian capital Sardis, the adjective must rather have been Σαρδιηνόν, Σαρδιηνικόν. As Herodotus says that the Colchians and Egyptians wove in the same manner, κατὰ ταὐτά, was there in Colchis also a fabric whose threads consisted of 360 finer fibres, and which was called Sardonic after the Lydian and universally Iranic word σάρδις, a year? Like Herodotus, a modern naturalist also brings Egyptian and Colchian flax into connexion with each other. Unger (*Botanische Streifzüge auf dem Gebiet der Kulturgeschichte, Wiener Sitzungsberichte*, vol. xxxviii. p. 130) says: "The flax-plant is not indigenous in Egypt, but was introduced there, and indeed, to judge by the nature of the plant, from far more northern lands, probably from Colchis." Surely not straight from Colchis, but by way of Babylon.

NOTE 46, PAGE 143.

A passage in the Odyssey (10, 156) gives us a distinct picture of how the primitive European world procured ropes during the forest-epoch. Ulysses has killed an unusually large stag on Circe's island, and the question is, how to carry the booty to his companions on the shore. He gathers branches and twigs, ῥῶπάς τε λύγους τε, spins them into a rope a fathom long, well twisted at both ends, πεῖσμα ἐϋστρεφὲς ἀμφοτέρωθεν, with which he ties the animal's feet together, hangs the latter round his neck, and so carries it down to the black ship. Compare with this the following description of Nesselmann, in his Dictionary of the Lithuanian language, p. 180: "*Kardẽlus* or

kardēlis, a strong rope for binding wooden rafts and wittinnen (a kind of river-boats), *generally twisted of bast or twigs;* the cable in larger ships; the third-pole of a waggon, *a young birch-tree provided with a twisted loop, or also a rope*, to which the third horse is fastened." What is still the custom in undeveloped Lithuania was practised by the Germans in ancient times. Grimm, RA., 683: "Simple antiquity instead of hempen ropes, twisted branches of fresh, tough wood," O. H. Germ., *wit*, Mid. H. Germ., *wide*, *lancwit*, *widen*, to bind, our *wiede*, *langwiede*, also in the other Teutonic tongues [Samson's "seven green withs"] as well as in the Celtic and Slavic (the various forms in Diefenbach, G. W. 1, 146). The *with* served to bind together roofs or rafts, waggons and yokes, for the leashing of animals, for scourging and for hanging criminals, etc. In every respect the Latin *vitis* corresponds with this description. That word does not mean a plant climbing up a tree or trunk, but, like *vitex*, *vimen*, and the Greek ἰτέα, a flexible plant that served men for winding and plaiting. Virgil says *lentae vites*, like *lenta salix*. As the slave and malefactor are beaten with the plaited with, and the Mid. H. Germ. verb *widen* actually means to flog; so among the Romans the *vitis* in the hand of the centurion was the tool for punishing disobedient soldiers, for example, Livy, *Epit.*, 57: "*Quem militem extra ordinem deprehendit, si Romanus esset, vitibus, si extraneus, fustibus cecidit.*" A climbing plant resembling the vine, namely, the Bryony, Latin *vitis alba*, the name of which probably passed over to the vine, is expressly named together with the willow by Ovid (*Met.*, 13, 800:

"*Lentior et salicis virgis et vitibus albis*"),

and served like the broom and rush for plaiting baskets (Serv. ad Virg. G. 1, 165: "*Quoniam de genistis vel junco vel alba vite solent fieri*"). Compare the Old Norse *sneis*, branch, and Mid. H. Germ. *sneise*, string. Probably in the same way the O. H. Germ. *repa*, vine, is related to the Gothic *skauda-raip*, shoe-string, and O. H. Germ. *reif*, rope; signifying therefore a plant used for plaiting and ropes, a shrub with flexible twigs, in which the partridge nestles (*reb-huhn*, vine-hen); and afterwards, when the grape-vine became known, was applied to that. In French the with was and is called *hard*, *hart*, the osier that serves for binding *harcelle*, which, as compared with the Lith. *kardēlus*, show the German consonant-change, and are therefore derived from German.

It was a stride forwards when the *bast* of trees, and a still longer stride when the fibres of the *nettle* were worked into ropes, bridles, girdles, stuffs, clothes, shields, etc. The Massagetæ clothe themselves

in bast, says Strabo (11, 8, 7: ἀμπέχονται δὲ (οἱ Μασσαγέται) τοὺς τῶν δένδρων φλοιούς); so do the Germani (Mela, 3, 3, 2: "*Viri sagis velantur aut libris arborum, quamvis saeva hieme*"), and carry shields made of the raw bark of trees (Val. Flacc. 6, 97, of the Bastarnæ:

"*Quos, duce Teutogono, crudi mora corticis armat*").

For such bast fabrics the linden-tree was commonly used, and is named from this property in all languages. The Greek φιλύρα is both linden and bast, and is certainly related to φλοιός, bark, and φελλός, cork. Theophrastus, *h. pl.*, 5, 7, 5: ἔχει δὲ καὶ (ἡ φιλύρα) τὸν φλοιὸν χρήσιμον πρός τε τὰ σχοινία καὶ πρὸς τὰς κίστας. So Theophrastus still knows of the bast of lindens being used for ropes and chests. In the great linden-region of Europe, in White and Little Russia, and the districts bordering the Carpathians, linden-bark is to this day in common use, and serves, according to the age of the tree, for waggon-baskets and river-boats, for mats, ropes, shoes, sacks, sieves, etc. The number of trees yearly felled in those districts and in the well-wooded north-eastern part of Russia for the sake of their rind is reckoned at about a million; the bast is softened in water and the material is ready. O. H. Germ. *linta*, A. Saxon and Old Norse *lind*, the linden-tree, Old Norse, *lindi*, the girdle. *Lind* in German dialects means bast, *Lind-schleisser* was an old word for rope-maker (see Grimm, RA., p. 261 and 520). The Latin *linteum* cannot be separated from the German *lind;* Wackernagel would derive the Romance *barca*, a bark, from the Low-German *borke*, Old Norse *börkr*, though the Greek βᾶρις, flat boat, which perhaps comes from Egypt, the Messapian βᾶρις and Latin *baris* seem to have the better claim. The Homeric λιτί, λῖτα (for λιντί λίντα), which is only found in the dative and accusative, we agree with Pott in bringing into this connexion; it signified a coarse cloth, probably at first a mat of lime-bast: the chariot, when put aside, is covered with it; it is spread over seats under the beautiful purple cover; the corpse of Patroclus is wrapt in it, and over that is thrown the white shroud. It is uncertain whether we are to consider it a real bast-mat, or a coarse linen-cloth. Latin *tilia*, linden, *tiliae*, bast; French *teiller*, to beat hemp; Italian *tiglio*, the rind of hemp. To the Slavic *lipa*, and Lith. *lẽpa*, lime-tree, answers the Greek λέπειν, to peel, λεπτός, tender (constantly used of flaxen stuffs, λεπτὰ ὑφάσματα=linen fabrics), Lith. *lupti*, to peel, O. H. Germ. *louft*, *lôft*, tree-rind. In the same way the Latin *līcium* doubtless belongs to the same series as Lith. *lunkas*, Russ., Polish, and Czech. *lyko*, bast. As the Latin *liber* proves, bast was also the most ancient writing-material. (Ulp. Dig., 32, 52: "*Librorum appellatione continentur omnia volumina, sive in charta, sive in membrana sint,*

sive in quavis alia materia: sed et si in philyra aut in tilia, ut nonnulli conficiunt, aut in quo alio corio, idem erit dicendum"). At the dawn of historical times, this much-used material is everywhere disappearing, but many names used for it passed over to the new plants that took its place.

Still more like flax were the fabrics made out of the fibres of the common wild *nettle*. They are still quite common among the half-nomads on the borders of Asia and Europe, a district that, in the gradual retreat of the ancient epochs of culture towards the East, often reveals a surprising picture of primitive Europe. The women of the Bashkirs, the Koibals, Sagai-Tartars, etc., work the *urtica dioeca* not only into nets and yarn, but into a sort of linen (see Storch's *Tableau Historique et Statistique de l'Empire de Russie*, ii., 249, 1801). Pallas, in his "Journey through Different Provinces of the Russian Empire" (I. p. 448, St. Petersburg, 1801), says of the Bashkirs: "They mostly manufacture for themselves a coarse linen stuff for clothing, . . . spinning the yarn out of the common great-nettle. These nettles grow in heaps on the rich soil around their dwellings, and, like hemp, are pulled up in autumn, dried, then soaked a little, and the bast usually taken off with the hand by crushing the stalks, and pounded in wooden mortars, till nothing but the tow remains." A fraud frequent in Turkestan is to weave nettle-fibres in with the silks and then pass off the stuffs for pure damask. Nestor relates in a remarkable passage that Oleg, sailing from Constantinople, provided the ships of the Russians with sails of *povoloka*, and those of the Slavs with sails made of nettle, *kropiva* (see Schlözer, Nestor, iii. p. 295). The first word is explained by Krug in his *Zur Münzkunde Russlands*, p. 109, St. Petersb., 1805, as a corruption of *Babylonian* stuff, that is, silk; perhaps the "nettle" sails were linen ones, which had retained the old name, only a finer kind, for the Slavs complained that they had not got their usual coarse sails which could better resist a storm. That the Germans also made nets of nettle-yarn is proved by the etymological affinity of the two words, Gothic *nati*, A. Saxon *net*, net, A. Saxon *netele*, nettle, etc.; and the nettle itself, Pruss. *noatis*, Lith. *notere*, Lettish *nâtra*, Old Irish *nenaid* (reduplicated, Cormac, p. 126), seems to have taken its name from *nähen*, to sew. Albertus Magnus still knows of the *urtica* being used for weaving (*De Vegetabilibus*, edit. Jessen, 6, 462: "*Duas autem habet pelles* (*urtica*), *interiorem et exteriorem; et illae sunt, ex quibus est operatio, sicut ex lino et canabo;*" and directly after: "*Sed pannus urticae pruritum excitat, quod non facit lini vel canabi*"). The China-grass, which we now get from India, Java, and China, is nothing but the stinging nettle, or one of its varieties, and furnishes stuffs that are in every way superior to cotton.

When flax reached the European nations, it was natural that the existing names for bast and nettle and their products should be applied to the new plant. Thus the Latin *linteum* acquired the meaning of linen, while in German *lind* retained the meaning of bast, and *linde* that of the tree that supplied it. A Celtic name for nettle is the Cymric *dynat*, *danad*, in Old Cornish *linhaden*, Armoric *linad*, *lenad*, *linaden* (Zeuss, ed. 2, 1076). The primitive form seems to be the Dacian "δίν=κνίδη," nettle, preserved in Dioscorides (Diefenbach, O. E. S. 329), and the Greek λίνον with the same change of *d* into *l* as in *dynad* and *linad*. If this conjecture be well founded, then the Greeks, when they received flax and linen from Asia in the pre-Homeric time, must have applied their names for the nettle and nettle-fabrics to the similar though far superior texture made of flax. The originally short vowel became in time, and in some districts, long: λῖνον (the contrary process is less probable according to the laws of the development of speech) and that is how the word sounds in Aristophanes (*Pac.* 1178), and the Comic poet Antiphanes (*Athen.* 10, p. 455)—the last passage has been wrongly changed by Meineke. In this latter form we find the word in Italy, *līnum;* thence it passed to the transalpine nations, Gothic *lein*, etc.—The German language has still two names for the plant itself, both evidently derived from plaiting and weaving, and touching on words with the meaning of hair: O. H. Germ. *flaks* and *haru*, genitive *harawes*. The first has in the Lith. *plaukas* and Slav. *vlasŭ* the meaning of "hair:" in the Lith. *plauszas* that of "fine bast;" *faks*, hair, a by-form of *flaks*, is identical with the Greek πέκος, πέκτος (which last is explained by the Scholiast to Nic. Ther., 549: πέκτος δὲ τὸν φλοιὸν τῆς βοτάνης, *i.e.*, bast), πέκω, I comb, Latin *pecto*. *Haru*, *harawe*, Old Norse *hör*, flax, we hold to be identical with the Slavic *krapiva*, *krapiva*, nettle, and Albanian *kerp*, hemp.

Among the things fished up from the Swiss lakes were found bundles of flax, pieces of linen stuff, mats plaited of flax, etc. As eminent naturalists have recognised the real fibres of flax in the above-named remains we cannot doubt the fact, although Garrigou and Filhol (*Age de la Pierre Polie*, p. 51, Paris et Toulouse, s.a., 4to) cautiously say: "*Le lin leur était probablement connu, à moins qu'une autre plante à écorce filamenteuse* (the great nettle?) *ait pu leur fournir de quoi faire des vêtements.*" At any rate, the flax was not that we now use, but a particular variety. O. Heer says (*Mittheilungen der Antiquarischen Gesellschaft in Zürich*, 15, 312): "The lake-dwellings linen is not the common flax. The small-leaved flax, *linum angustifolium Huds.*, which is native to the Mediterranean countries from Greece and Dalmatia to the Pyrenees, may be called the mother-plant of the cultivated lake-dwellings linen. The Cretan catch-fly proves that the

inhabitants of the lake-dwellings procured their flax-seeds from Southern Europe"—the catch-fly being found as a weed among the remains of the flax. According to that, the Swiss cultivation of flax was derived from the Italian. The more developed we conceive the agriculture and fruit-culture of these lake-dwellers to have been, the lower we must place them in point of time. Let us bear in mind that the objects hauled up from the bottom of the lakes, however interesting the sight of them may be, cannot prove anything chronologically; and that all the guesses made as to the age of this culture have been founded, not on an examination of its remains, but on other, and often very airy, considerations and assumptions. If we were fortunate enough to find a Massaliote coin in the middle of one of these bundles of flax, or if some good fairy would confide to us a few words of the language of these pile-dwellers—such as their names for flax, wheat, plough, etc.—what a flash of light would suddenly dart into that dim world! We should not wonder if it then turned out that these mysterious primitive men, with their stone weapons and tools, were no other than the ancestors of the Helvetians, whom we have known so well since Cæsar's time, and that the higher culture of which we find traces among them was derived from the shores of the Mediterranean.

NOTE 47, PAGE 150.

Movers (*Phönizier*, 2, 3, 157) altogether groundlessly asserts that, "hemp for ships' ropes and sails, of the most excellent quality, was procured from Phœnicia." This could at most be true of the Roman time, when the hemp of the Carian town Alabanda was also greatly valued. The expression *σπάρτα* for ships' ropes, which occurs in a single passage in the Iliad 2, 135:

καὶ δὴ δοῦρα σέσηπε νεῶν καὶ σπάρτα λέλυνται—

leaves us in the dark as to what they were made of. If, however, we compare the kindred word *σπυρίς*, Latin *sporta*, basket, it becomes credible that *σπάρτον* too was spun out of a kind of rush or broom. But the *σπάρτα πυκνὰ ἐστραμμένα* on the linen corslets of the Chalybes in Xenophon (*Anab.* 4, 7, 15) may have been of hempen stuff, as the Chalybes dwelt near those districts and nations where hemp first appears.

NOTE 48, PAGE 151.

Besides the common European expression, the Slavs have also a peculiar word for hemp: Russian *penka*, Polish *pienka*, Czech. *penek*, *penka*. They may have borrowed these, like so many other things, from the Scythians or Sarmatians, for we have in Persic and Afghan

beng and *bang*, and even Zendic *banha*, drunkenness, *Bañga*, the name of the daêva of drunkenness (see Justi, *Handbuch*, p. 209). A second Slavic word for hemp *póskoni* (Russ. and Czech.) answers to O. H. Germ. *fahs*, Greek πέσκος ; and its Polish form, *ploskon*, to O. H. Germ. *flahs* —a remarkable parallelism in the two groups of languages. Bishop Otto of Bamberg found among the heathen Slavs in Pomerania much *canapum* (see *Herbordi vita Ottonis*, in Pertz, Scr. 20, p. 745).

NOTE 49, PAGE 156.

Just as the Locrians treated the Sicilians, the Attic General Hagnon is said to have treated the barbarians on the Strymon : he swore to them an oath that he would do nothing for three days ; but by *night* he threw up his fortifications, and so founded Amphipolis (*Polyæn.* 6, 53). When the Persians vainly besieged Barcē, in Africa, they swore to raise the siege on payment of a tribute by the Barcæans. This promise was to remain valid as long as the earth upon which they stood remained firm. But the ground was artificially undermined, the earth sank, and the town was attacked and taken (Herod. 4, 201). Dido also acquired the site for the foundation of Carthage by a literal interpretation of words. The monk of Corvey, Widukind, relates how the race of Saxons landed first at Hadeln. One of their young men buys a heap of earth from the Thuringians for much gold, and is laughed at for being taken in. But he scatters the purchased dust all over the country, and thus the land becomes the property of the Saxons, whose pretensions are confirmed by a bloody battle and the defeat of the Thuringians. The Wartburg came into the possession of the Landgrave of Thuringia in a similar manner. Twelve knights, standing in the castle-court, swore by their swords that they stood on ground belonging to the Landgrave ; but they had brought earth from Thuringia into the courtyard with them. Natural nations with undeveloped moral feeling admire cunning as much as valour. An oath is feared, but only as a magic spell, and right is still inseparable from symbol. Even yet uneducated people make an oath lose its effect by using a sort of counter-charm : thus, while they lift the right hand up to swear, they hold the left hand behind their back, with three fingers pointing *down*, etc.

NOTE 50, PAGE 173.

Laurus, derived from *luo*, *lavo*. Of the same origin are *Lavinia*, *Lavinium*, *Laurentium*, the town of atonement, said to have been planted round with laurel, etc. (see Schwegler, *Römische Geschichte*, i. p. 319). This derivation would be still more certain if, like Benfey,

we durst connect the Greek *δάφνη* with *δέφω*, *δεψέω*, *δέψω*, in the original sense of to moisten, to soak. But against this is the Thessalian *δαύχνα* in the compound word *ἀρχι-δαυχνα-φορείσας*, in Boeckh, C. I., No. 1766, as well as the *δαυχνός* for laurel now restored in two passages of Nicander (Ther. 94, and Alexiph. 199). Hence some would derive the word from a root meaning *to burn* (Legerlotz in Kuhn's *Zeitschr.*, 7, 293), so that the laurel would still be a tree used for purifying, only not by rinsing but by aromatic *fumigation* (Paul., *Epit.*, ed. O. Müller p. 117 : "*Itaque eandem laurum omnibus suffitionibus adhiberi solitum erat*"). In that case would the *l* in *laurus* stand for *d*, as in several other Latin words? According to Hesychius, the Pergæans in Asia Minor said *λάφνη* for *δάφνη*, and he gives another word which, because of its derivation with *r*, nearly approaches the Latin : *δνάρεια· ἡ ἐν τοῖς Τέμπεσι δάφνη*. If the Greek word is derived from an Asiatic language, then, of course, any attempt to explain it etymologically from the Greek is vain. *Μύρτος* (*μυρσίνη*, *μυρρίνη*, *μυρίνη*) is also an Oriental word, for it cannot be separated from *μύρον*, *μύρρα*, *σμύρνα*. In the oldest times, the shrubs whose leaves or exuding gum served for perfumes were not strictly distinguished. To the passages quoted in the text we may add Serv. ad. Virg. Æn., 3, 23, where *Myrene*, a beautiful girl, and priestess of Venus, wishing to marry a youth, is changed by the goddess into a *myrtus*. That the idea of sorrow, as Movers, 1, 243, has it, is contained in the name of Myrrha, the daughter of Cinyras, is from what has been noticed above impossible.

Note 51, page 175.

Schneider remarks on the passage quoted from Theophrastus: "*Is* (*Plinius*) *igitur aut plura in suo libro scripta legit, aut aliunde inseruit Mithridatis nomen.*" Pliny could not well find the name of Mithridates in his copy of Theophrastus, who lived 200 years before Mithridates. An example of learned absence of mind!

Note 52, page 179.

Must not the tree, on the contrary, have first acquired its Greek name *πύξος*, from its use in the finer kinds of wood-carving and cabinet-making? There can be no doubt that the word belongs to *πτύσσω*; but the fundamental idea cannot be *flexible*, as Benfey supposes in his Dictionary of Roots, for the box-tree has exactly the opposite quality; as little can it mean the *crumpled*, *crooked* shrub, as Grimm supposed, for *πτύσσω* means just the contrary; to fold, to dispose in layers, to splice, to fit boards together. Homer has already *πτύχες*

for the layers of a shield, *ἐν πίνακι πτυκτῷ* for a folded tablet, on whose inner surface signs were engraved. Pindar has *ὕμνων πτυχαῖς* for the parts of a song fitting into each other, as in cunningly wrought vessels, etc. If the tree took its name from such boxes and tablets made of its wood, it follows that trade introduced such objects, as well perhaps as blocks of the raw material, to the Greeks before they had ever seen the tree itself—a confirmation of the views expressed in the text. The name *Κύτωρος, Κύτωρον*, might be Greek and not barbaric, if it contains in Æolic form the very old word, which, as *κότινος*, meant to the later Greeks the oleaster; to the Latins, as *cotinus*, some shrub native to the Apennines; and to the Sinopeans perhaps the *buxus* growing on their mountains.

NOTE 53, PAGE 180.

Benfey, 2, 373. The *m* of the Semitic *rimmon* changed "by a very natural transformation" into the Greek digamma. Hesychius is still acquainted with the name *ῥίμβαι* for a sort of large pomegranates. (If, as he adds, the word was more correctly *ξίμβαι*, and the preceding gloss: *ξίμβραι· ῥοιαί Αἰολεῖς*, were certain, other suppositions would arise.) The same Semitic word is to be found perhaps in the first part of *ὀρόβακχος* (Schol. ad Nic. Ther. 869: *λέγεται δὲ ὁμοίως ἡ ἐξάνθησις τῶν ῥοιῶν ὀρόβακχος*), or *ὀροβάκχη* (Hesych.: *ὀροβάκχη· βοτάνη τις· οἱ δὲ τῆς ῥοιᾶς τοὺς καρπούς, οὕς ἔνιοι κυτίνους*). *Κύτινος* is also used for the blossom from which the fruit is developed (Schol. ad Nic. Alex. 610: *κύτινόν φασι τὸ ἄνθος τῆς ῥοιᾶς, ὅπερ ἀποξηθὲν ῥοιὰ γίνεται*). On the verses of Nicander, Alex. 489:

> *βρύκοι δ' ἄλλοτε καρπὸν ἅλις φοινώδεα σίδης*
> *Κρησίδος, οἰνωπῆς τε καὶ ἣν Προμένειον ἔπουσι—*

the Scholiast remarks: *οἰνωπῆς· εἶδος ῥοιᾶς καὶ οἰνάδος καὶ προμένειον δ' εἶδος ῥοιᾶς, ὠνόμασε δ' αὐτὴν ἀπό τινος Προμένου Κρητός*. With regard to *σίβδη*, Pott (E. F., ed. 2, 4, 81) calls attention to the Persic *sêb=pomum malum*. From the name of the blossom, *βαλαύστιον* (probably also an Oriental importation), it is well known that the Italian *balaustro*, *balaustrata*, and our balustrade are derived.

NOTE 54, PAGE 184.

Fiedler (*Reise*, 1, 625), relates as follows: "When King Otto visited Thermopylæ in 1834, an old woman brought him a fine pomegranate, and wished him as many happy years as there were pips inside it." This reminds one of Herodotus, 4, 143: "When Darius opened a

pomegranate, and was asked of what things he would like to have as great a number as there were seeds in the fruit, he answered, as many true men like Megabazus, which he would value more highly than the conquest of Greece." Plutarch relates the same story (*Regum et Imp. apophthegm. in.*), but of Zopyrus.

Note 55, page 189.

The lilies said to have been found in Assyrian bas-reliefs (G. Rawlinson, "The Five Great Monarchies," 1, 440), were no doubt such κρίνα, as well as those from which the chapiters of the columns in Solomon's temple were copied. Also the κρίνα that Phidias made on the mantle of the Olympian Zeus (Pausan., 5, 11, 1, if the text be correct) are not to be regarded as *lilia candida*, but as conventional flower forms. The Egyptian rose-like κρίνεα which grew in the river are explained to be *Nymphæa nelumbo, L.*

Note 56, page 189.

About ῥόδον, βρόδον and the identical words in Armenian, Kurdic, etc., see the quotations in Pott, E. F., ed. 2, 2, 817. According to Spiegel (*Beiträge*, 1, 317), the Armenian *vard* leads to an Old Persian *vareda*, from which, with the loss of the final *d*, the present *gul* (rose, already found in the Huzvâresh) was formed in the regular way. Spiegel also disputes the Semitic origin of the word. Λείριον=Persic *lâleh*, lily, must undoubtedly be considered of Persian origin (Benfey, 2, 137). Susa or Shushan, the winter capital of the Persian kings, was said to derive its name from the abundance of lilies in the neighbourhood; for Persic σοῦσον=Greek κρίνον.

Note 57, page 191.

Rŏsa, according to Pott, from ῥοδέα, rosebush, as the Italian popular language made Clausus out of Claudius, etc. Only instead of deriving it from the noun ῥοδέα, which would include a change of meaning, we would rather say that it came from the adjective ῥοδέα, ῥοδία. The rose is called from ancient times ῥοδέα κάλυξ, rosy cup, already in the Hymn to Demeter; κάλυξ being to distinguish the improved full rose from the wild. This was so common, that even κάλυξ by itself was understood to mean rose; hence καλυκῶπις Νύμφη or κούρη, nymph or maiden with rosy cheeks. And popular speech might, on the other hand, leave out the substantive, and say merely ἡ ῥοδέα=*rosa*. According to Hesychius the Macedonians had a peculiar word for rose: ἄβαγνα·

ῥόδα; Macedonia, indeed, was the fatherland of this cultivated plant as regards Europe. In Zeuss, p. 1076, ed. 2, there is for *rosa* an Old Cornish word *breilu* (Cambr. *breila*, *breilw*), the explanation and utilizing of which for the history of culture we must leave to experts in that language. Just as obscure is p. 163 the Cambrian gloss: *ffaow* (*rosae*).

Lilium instead of *lirium* arose from the tendency to assimilation; the modern Latin languages felt, on the contrary, the need of dissimilation, and said *giglio*, *lirio*, etc. The Spanish and Portuguese *azucena* for white lily is from the Arabic, and therefore identical with the Old Testament *Susan*, Susannah, the word from which Stephen of Byzantium derives the name of the Persian capital Susa. The Arabs were fond of gardens and flowers. The modern Greeks have abandoned the word ῥόδον, and say the thirty leaved τριανταφυλλεά (Fraas, *Synopsis*, p. 76; so did latterly even the ancient Greeks, see Langkavel, *Botanik der spät. Gr.*, p. 7), which word has also passed into Albanian; the lily, κρίνος, keeps pretty much its old name, which is used by the Wallachians, and was likewise adopted by the Old Slavic ecclesiastical language.

NOTE 58, PAGE 203.

Latterly Hartmann, in the *Zeitschrift für ägyptische Sprache*, p. 21, 1864, and Ebers (*Aegypten und die Bücher Mose's*, 1, p. 267) have supposed that, for some reason unknown to us, the Egyptian painters may have been forbidden to copy camels; but if the camel had existed in Egypt, it would not have been absent in the whole of North Africa down to the Roman time (see Barth, *Wanderungen*, p. 3-7). And fowls, to which Ebers appeals, were also a late importation; see below, the section on the Domestic Fowl. Nothing can be determined from the dromedary bones said to have been found among other animal remains by borings made in Egyptian soil, this being an argument much too vague and subject to a thousand possibilities. So we must continue to believe, that at the time specified Pharaoh cannot have given Abraham any camels, and probably, for other reasons, no asses (Gen. xii. 16); while the horse, which was also introduced into Egypt, but at a time that long preceded the Jewish recollections and writings, could not fail to be among the gifts.

NOTE 59, PAGE 204.

Movers, in his *Phönizier*, Th. ii., at the beginning, is of the contrary opinion, and derives the Grecian name of the country, ἡ Φοινίκη, from

φοίνιξ, the date-palm, because the ancients considered Phœnicia, Palestine, Idumæa, and Syria, to be countries rich in palms. But then what becomes of φοίνιξ, scarlet, which has evidently the same origin? Gesenius, who was inclined to take φοίνιξ, purple, for the point of departure (*Monum. Phoen.*, p. 338), could at least support his opinion by a tolerable Greek etymology (φονή, φοινός, etc.). But how is φοίνιξ, palm, to be explained from the Greek? Besides this, we have a decided reason in the fact that Homer knows the Phœnicians from of old, as a trading, sea-faring, and piratical people—we need only recall the history of the godlike swineherd Eumæus—but he is still quite full of fresh admiration for the palm in Delos. Φοίνιξ, a Phœnician, can have arisen in no other way than from the native name of the country, which is handed down to us in the Hebrew form as Kanaan, Kenaan, and in the later Phœnician as Χνᾶ, Ὀχνᾶ. The initial letter, about whose pronunciation, at a time so far beyond all written documents, we know nothing, either changed from a guttural to a labial aspirate on the Greek tongue; or, in some antique Semitic or semi-Semitic dialect, for example, that of the Philistines or Carians, if these were of Semitic race, the word began with a sound which in Europe was represented by φ. In the same way, at the *media* stage, was formed from the Hebrew Gobel and Phœnician Gybl, the Greek Βύβλος. That a shorter form was also used in ancient times is shown by the borrowed Latin *Poenus*, which in Greek would be φοῖνος.

Note 60, page 205.

Plin. 16, 240: "*Palma Deli ab ejusdem dei* (*Apollinis*) *aetate conspicitur;*" that is, the palm of Delos was still standing in the time of Pliny! As the natural life of the date-palm is not so long, and the old tree must have been replaced by more than one successor after the time of Ulysses, this may well make us cautious about other cases, where long-lived trees are said to have lived from the mythic and heroic ages.

Note 61, page 208.

Gesenius in the *Thesaur.*, p. 345, finds in the Greco-Latin *Palmyra* a reproduction of the original, half according to sense and half according to sound, but without giving any likely reason for such a half-and-half proceeding. The Romans no doubt found the name already when they conquered Asia, and the Greeks of the Seleucid kingdom, if they were half-translating, would not have lugged-in a Latin word *palma*. Movers (2, 3, p. 253) says: "I consider the name Palmyra a corruption of Tadmor." But as exactly the same "corrup-

tion" took place with the old Latin word *palma*, we must find another name for the process. As for the change of *d* or *t* into *l* before an *m*, that is a very likely thing to happen; witness καδμία, καδμεία, and the Romance *calamine*, *giallamina*, Germ. *galmei*; *Patmos*, now *Palmosa*; Arabic and Persic *elmâs*, Russian *almaz*, diamond, from ἀδάμας; the Zendic *Haêtumañt*, Greek *Etymander*, now the River *Helmand*, etc.

NOTE 62, PAGE 209.

This σπάδιξ, σπάδικος—both vowels are long—is in so far a remarkable word, that it exactly corresponds to the meaning of φοίνιξ. It signifies a palm-branch with the fruit attached, then a red or reddish-brown colour, and lastly a musical instrument. Gellius (2, 26) declares the word to be Doric. "*Spadica enim Dorici vocant avulsum ex palma termitem cum fructu*"—therefore not the male stigma, the σπάθη, but rather the cluster of dates. According to Plutarch (*Symp.* 8, 4, 3) it meant the palm-branch, that is, the leaf with which the victor was crowned: καίτοι δοκῶ μοι μνημονεύειν ἐν τοῖς Ἀττικοῖς ἀνεγνωκὼς ἔναγχος, ὅτι πρῶτος ἐν Δήλῳ Θησεὺς ἀγῶνα ποιῶν ἀπέσπασε κλάδον τοῦ ἱεροῦ φοίνικος· ᾧ καὶ σπάδιξ ὠνομάσθη. A shorter form is seen in Hesychius: σπᾶ· τὸ φυτὸν τοῦ φοίνικος. Among Latin writers Virgil uses the word for the brown colour of horses, otherwise designated *badius*, Ital. *bajo*, French *bai* (*Georg.* 3, 82:

"*Honesti*
Spadices glaucique: color deterrimus albi").

The ancients, as is shown by the above passages from Gellius and Plutarch, derived it from σπάω; but it cannot be doubted that it is a word borrowed from the Semitic language. A later name for palm-branch, βαΐς, βαΐον, used in the New Testament, comes from Egypt; Old Egyptian *bâ*, Coptic βητ (see Champollion, *Gramm. égypt.* i. p. 59; Benfey 2, 369). The proper Latin expression is that used by Gellius, *termes*, as the passage in Ammian. Marcell. (24, 3, 12) shows: "*Et quaqua incesserit quisquam, termites et spadica cernit adsidua, quorum ex fructu mellis et vini conficitur abundantia.*" It was probably formed from the Greek τέρμα, and meant the branch set up at the goal as the prize of victory.

NOTE 63, PAGE 212.

Cyprus, the old station of the sea-farers, took its name from the cypresses that hailed the approaching mariner from afar, and whose timber was exported from the island. We know that other islands

have been named after trees; for example, the Pityusæ near Spain, from the fir-tree *πίτυς*, or Madeira from its building material, *a materie*. Ritter—who at the beginning of his beautiful monograph assumes that cypresses were aboriginal in Afghanistan, and that they migrated thence with the ancient religion—is afterwards inclined to think that the tree was also native to Phœnicia, Canaan, and even the Ægæan islands (p. 577). But in that case would their naturalization in the similar climate of South Italy (see below in text) have been so difficult, and would the tree be there so plainly reduced in size and strength? The latter fact is easily explained if we suppose a long and gradually declining series of climates, beginning with Afghanistan and ending to the north-west with the Apennines. Again, that the island of Crete can have been included in the original sphere of propagation of a tree that did not exist in Greece itself is hardly credible when we consider the similarity of natural conditions in the two. The cypresses on Lebanon may have been imposing, but as they cannot be compared to the giants in the western region of the Indus, they declare themselves but secondary and derived from the latter.

NOTE 64, PAGE 214.

In other ways also the legends of the founding of Psophis (in Pausan. as above; Steph. Byz. under *Φήγεια* and *Ψωφίς*) are significant. The reported change of name, as in the case of Kyparissia in Phocis, points to the commencement of a new epoch of culture; the place once called *Phēgeia*, *Phēgia*, oak or beech-town, where Alphesiboia, the bringer of oxen, had ruled, was now, on passing to the higher stage of tree-culture, named Psophis; and who was Psophis? The daughter of the Sikanian king Eryx, who bore to Herakles, the wandering fulfiller of works of culture, Echephron and Promachus. Here also, as in the legend of Meleager, a rude outbreak of the old forest life appears in the shape of a wild boar that devastates the gardens, and is overcome by Herakles. The necklace and peplos of Harmonia (Movers, I, 509); Psophis as daughter of Eryx; the worship of Aphrodite Erycina by the Psophidians; and, lastly, the cypresses or virgins at the grave of Alcmæon, all evidently point to Phœnician influence. Along what route this had come is taught by the connexion with Akarnania (where there was another Psophis; Alcmæon went to Akarnia, gave the country its name, and then returned), and with Zakynthos (where the castle was called Psophis, and was said to have been founded by Zakynthos, a Psophidian, and son of Dardanos); that is, with seats of the Teleboeans and Taphians, both of the Leleges kindred, who, as it seems, first sailed from Greece to

Sicily. The place Psophis must very early have invited men to the working of mines from the peculiar position of the mountain, which is exactly described by Polybius, 4, 70. E. Curtius (*Peloponn.*, 1, 400) supposes that a legend of metamorphosis had attached itself to the Psophidian cypresses. It is a religious and poetical custom in the East, from the earliest to the latest times, to represent the cypress as inhabited by a female divinity, and to compare a virgin to the cypress. Goethe in the *Westöstlicher Divan:*

"*Verzeihe, Meister, wie du weisst,*
Dass ich mich oft vergesse,
Wenn sie das Auge nach sich reisst,
Die wandelnde Cypresse,—
An der Cypresse reinstem, jungem Streben,
Allschöngewachsne, gleich erkenn' ich dich."

A work by Lajard treats of the cypress as a mystic attribute from the artistic-archæological point of view, after the manner of Creuzer: *Recherches sur le culte du cyprès pyramidal chez les peuples civilisés de l'antiquité*, Paris, 1854, in 4°. The various incidents in the myth of Kyparissos, the favourite of Apollo, scattered through the writings of the ancients were collected by Avellino (*Il Mito di Ciparisso*, Naples 1841, 4°), to illustrate a Pompeian painting.

NOTE 65, PAGE 216.

We cannot deny ourselves the pleasure of adding to Pliny's expression: "*Dotem filiae antiqui plantaria appellabant*," the following passages from Hebel's *Schatzkästlein:* "If I had the choice between having a cow of my own, or a cherry or walnut tree, I would rather have the tree. . . . Such a tree eats neither clover nor oats. No, it quietly drinks like a child the nourishing juices of the earth, and imbibes warm life from the sunshine and freshness from the air, and shakes its locks in the storm. Besides, my cow might die early; but a tree like that keeps its blossoms, its birds'-nests, and its bounty for child and grandchild. . . . As soon as I have earned enough to buy a bit of land of my own, and marry the daughter of my mother-in-law, and God blesses me with offspring, I will plant for every child a little tree of its own; and it must be called after the child, Louis, John, or Henrietta, and be its own first capital and fortune; and I shall watch how they grow up and thrive together, and become more and more beautiful; and how, in a few years, my little boy climbs up his capital, and draws his interest." Among the Arabs in Spain it was the custom on the birth of a child to dig a so-called silo in the ground, fill it with

corn, and cover it up air-tight. In this subterranean bin the corn lay for many years, and became the child's property when he grew up (see Murphy's "History of the Mahometan Empire in Spain," p. 262, where the author refers to Jacob's "Travels in the South of Spain"). The same custom, but of course barbarized, prevailed among the Little Russians on the Dnieper. At the birth of a daughter a keg of brandy was buried in the earth, and when the girl was married it was taken up again, and emptied by the guests with glee; and of course many another cask or pail filled with newer spirit was in readiness to keep up the enthusiasm.

NOTE 66, PAGE 222.

Russian *klen*, Polish *klon*, Czech. *klen*, Lith. *klévas*, the maple; O. Norse *hlynr*, *hlinr* (Schmeller, 2, 465), Mid. H. Germ. *lînboum*, *lîmboum*, now *lehne;* O. Corn. *kelin*, Cambr. *kelyn*, Armoric *kelen*, *kelennen* (Zeuss. ed. 2, p. 1077); Mid. Latin *clenus*. With this northern word compare a passage in Theophrastus, *H. Pl.*, 3, 11, 1: ἓν μὲν δὴ (γένος) τῷ κοινῷ προσαγορεύουσι σφένδαμνον, ἕτερον δὲ ζυγίαν, τρίτον δὲ κλινότροχον, ὥς οἱ περὶ Στάγειρα. This *klino-trochos* was the name among the country-folk about Stagira, as Theophrastus had probably heard from his master; perhaps the second half of the word, to judge by its first letters *tr*, expressed the notion of *tree*. Another Macedonian word γλεῖνον, γλῖνον (or γλεῖνος?), (Theophr. 3, 3, 1: σφένδαμνος, ἣν ἐν μὲν τῷ ὄρει πεφυκυῖαν ζυγίαν καλοῦσιν, ἐν δὲ τῷ πεδίῳ γλεῖνον; 3, 11, 2: καλοῦσι δ' αὐτὴν ἔνιοι γλεῖνον, οὐ σφένδαμνον), must be related to the above. The Latin *acer*, *aceris* (for *acesis*), seems identical with the "ἄκαστος· ἡ σφένδαμνος" in Hesychius. It is known that the German *Ahorn* (*o* because it sounded like horn) was formed from the Latin *acer*, or rather from the adjective *acernus;* and from the German is derived the Slavic *yavor*. A native Slavic word for maple, *repina* (also Albanian), is formed from *repiy*, thorn, like Latin *acer* and Greek ὀξύα from the root *ak*, sharp (see W. Tomaschek in the *Zeitschrift f. d. oesterr. Gymn.*, 1875, p. 529).

NOTE 67, PAGE 229.

Or was only the tongue of the scales made of a piece of cane? or did *measuring* by the cane come first, and its name then, in the sense of rule, standard, get transferred to the scales? The obscure τρυτάνη, Latin *trutina*, is explained by the Slavic *trŭsti*, arundo, where the *s* arose regularly out of the *t;* therefore τρυτάνη also originally meant cane.

NOTE 68, PAGE 252.

To illustrate more fully what has been said in the text, we add some

philological remarks that have occurred to us. Fr. Beckmann, in a learned essay on the origin and meaning of the name *Elektron* for Amber (in *Zeitschr. für die Gesch. und Alterth. Ermlands*, I. pp. 201, and 633, Mainz, 1860), would derive both ἠλέκτωρ Ὑπερίων, and ἤλεκτρον and ἀλεκτρυών from ἀλέκω, ἀλέξω, so that the notion of *averting*, *warding off*, would lie at the bottom of all three. Now it is indifferent to our purpose, whether by the term ἠλέκτωρ the god was originally represented as beaming or as averting (something like Ἀπέλλων) ; the name for amber was certainly formed after that of the Sun-god. It proves nothing that in later times the elektron was used as a magic talisman and fantastic remedy, for that was the case with a thousand other objects, and especially with all precious stones. Nor had the *gemma alectoria* any defensive or averting power ; it was serviceable to athletes only because it was said to be found in the stomach of the cock, and the latter is a pugnacious creature, ἀλεκτρυὼν μάχιμος.

The Latin *gallus*, *gallina*, are connected by Pott and Leo Meyer with the Greek ἀγγέλλω, ἄγγελος, which obscure word appears even in Greek as only the remains of an obsolete root. It is difficult to believe that so late as 500 B.C. the word *gallus* was suddenly formed in Italy from a similar verb not otherwise known there. Curtius has supposed, with more probability, that *gallus* is an assimilation of *gar-lus* from *garrio*, γηρύω. But *gar-lus* would also be a too antiquated form, as the root would here appear without the suffix which had long grown to it, as in *garrulus*. Besides, neither *garrire* nor γηρύειν is ever used of the voice of the cock ; and the corresponding but reduplicated Slavic *glagolati*, to speak, goes to form quite a different bird's name ; *galica*, *galka*, jackdaw, the chattering bird. If we compare the Latin *galla*, and the Greek κηκίς, both meaning gall-nut, we cannot help supposing that in *gallus* also there is hidden an assimilated guttural, and that the cock was so called mimetically, as the cackling bird. Hesych. κάκα· κακία ἢ ὄρνεον.

The German *hana* is generally compared to the Latin *cano*, *ce-cin-i*, which verb is used exactly for the crowing of the cock (*galli-cinium*, cock-crowing, *canorum animal gallus gallinaceus*). The same verb is also extant in Old Celtic, and, reduplicated as in Latin. The same root is found in Greek in extended form : καναχή, κανάζω, κόναβος, and in the verse of Cratinus it is used of the cock : καναχῶν ὀλόφωνος ἀλέκτωρ. But it is suspicious that of the verb *hanan*, here presumed, there is no trace either in the Germanic, Lithuanian, or Slavic languages ; and further, that the oldest and most genuine German word for the crowing of a cock is *hruk*, *hrukjan*, still used by Goethe of the cooing of the pigeon:

"*Da kommt*
Dahergerauscht ein Taubenpaar
Und ruckt einander an."

So that the doubt remains, whether the German *hana* be not some borrowed Southern name. If a word was extant anywhere, like that in the gloss of Hesychius : *ἡικανός· ὁ ἀλεκτρυών* (explained by Gerland as early-chanter, Pott, E. F., ed. 2, 4, 283), the German word would not be so strikingly isolated.

With the Armoric, North-French and A. Saxon *coq*, *cocc*, Finnish and Esth. *kukko*, *kuk*, agrees the North-German word for the young brood, O. Norse *kyklingr*, A. Saxon *cicen*, *cycen*, frequent in Low German, whence, in the form *küchlein*, it has now passed into High German. This word strictly stands aloof from the Gothic *qius*, our *quick*, and all that holds of these, by its different initial and different vowel, though, from the similarity of the sounds, they may now and then have been confounded. But the same word appears in old Greece as the true popular expression for the chanting and crowing of the cock. Sophocles called the cock *κοκκυβόας ὄρνις* (Fr. 718, Nauck.); in Aristophanes, Cratinus (Meineke 2, 1, 186 : *κοκκύζειν τὸν ἀλεκτρυόν οὐκ ἀνέχονται*), and Theocritus, popular poets, *κοκκύζω*, *κοκκύσδω*, is the unforced expression for the crow of the cock, and was also used by the orators Hyperides and Demosthenes (*Poll.* 5, 89). The *göckelhahn*, etc., of Upper Germany, may be derived from the French.

A similar, but not identical, name is spread through another region, namely, the wide Slavo-Byzantine world : Slav. *kokotŭ*, gallus, *kokosha*, *kokoshŭ*, gallina, Wallach. *cocós*, Magyar *kakas*, Albanian *kokos*, Mod. Greek *κόκοτος* (with corrupt by-forms, Russ. *kótchet*, Albanian *kapós*). The Sanskrit *kukkuta*, gallus, is too distant, both in time and space to be taken into account.

Only among a portion of the Slav nations, which also form a separate group in point of language, do we find the O. Slav. *pietlŭ*, Servian *piyetao*, Croat. *petelin*, Russian (with another suffix) *pètukh*. Agreeing with it in sense are the Lith. *gaidys* (singers from *gëdóti*, to sing, whence also *gąsli*, the well-known stringed instrument *gusli*), and the Albanian *kendees* (from the verb *kendoig*, I sing, which is probably the Latin *cantare* borrowed).

An Old Celtic name for the cock, besides *cerc*, is furnished by Zeuss's "Cornish Vocabulary," p. 1074 : *chelioc*, *colyek*, O. Irish *coileach;* Zeuss doubtingly explains it as *salax*, pp. 849 and 816. The "*calocatanos=papaver silvestre*," occurring in Marcellus Empiricus (E. Meyer, *Geschichte der Botanik*, 11, p. 312), would here find its desired explanation, as cock-flower, like *coquelicot*, see Diez sub v.;

Von Martens (Italien 2, 40) says the purple-violet flowers of the *Campanula speculum*, L., are called in the district of Verona *cantagaletti* or *cuchetti*.

There is also no want of obscure and isolated names in Europe; as the Old Cambrian, Cornish, and Breton *iar*, *yar*, hen; and with the same meaning the Lith. *viszta*, Lettish *vista*. In O. Prussian the cock was called *gertis*, the hen *gerto*, and the hawk *gertoanax*.

Certainly many of the above expressions are only onomatopœia. But the explanation by independent imitations of sound is not alone sufficient. It is contradicted by the circumstance that these names appear evidently in sequence and in zones, and by their too close agreement. If they had not migrated, but had arisen spontaneously in each place, there would be found a much greater variety, for every nation hears differently, and loves different combinations of sounds. On the other hand, nothing is more easily picked up by one nation from another than onomatopœia, interjections, ejaculations, emphatic and elementary expressions of every kind. And if the wandering trader or physician—those two great missionaries of culture among unfriendly barbarians—if the captured slave or abducted maiden had been used to designate the cock in their mother tongue, as, for example, the singer, they would name it and interpret it no otherwise to the barbarians, as soon as they got a smattering of their language. So the Greek κλώζειν, Latin *glocire*, *glocitare*, to cluck (Columella, 5, 4: "*Glocientibus; sic enim appellant rustici aves eas quae volunt incubare*"), cannot have spread so far through all European languages, even the Slavic, without the help of borrowing.

NOTE 69, PAGE 262.

In the word περιστερά, tame pigeon, which appeared late, Benfey (2, 106) discovered a superlative and comparative form of *prî*, to love, so that it meant "much enamoured." We prefer to connect it with Slav. *pero*, penna, *prati*, *pariti*, volare; Zend. *parena*, *perena*, feather, wing, Mod. Persic *par*; Kurd. *per*; O. H. Germ. *farn* or *farm*, A. Saxon *fearn* (fern being the feathery plant; reduplicated in Lith. and Slavic: Lith. *papartis*, Polish *paproc*, Russian *paporot*; Old Gallic *ratis*, in Celtic fashion for *pratis*, O. Irish *rath*, *raith*, O. Corn. *reden*, Cambr. *rhedyn*). Pott, in his first E. F., explained φάψ φαβός, by φέβομαι, to fear; an assimilated guttural must be hidden in φάσσα, to which then the Mid. Greek φάχητε· τὰ αἵμα τῆς φάσσης, the Mid. Latin *facha*, *facheta*, *fakecha*, and even Oriental names, would have a resemblance (see Pott in Lassen's *Zeitschr.* iv. 28—Diefenbach G. W. sub v. *ahaks*). An O. Russ. *faza*, palumbes, is thought by

Miklosich (*Fremdwörter in der Slavischen Spr.* p. 87) to be the Greek φάσσα borrowed. With the Prussian *keutaris*, ring-dove, agree the O. Cornish *cudon*, Cambr. *ysguthan*, O. Irish *ciadcholum*=palumbes (Zeuss, ed. 2, 1074); also, to our surprise, the Prussian *poalis*, pigeon, with the Greek πέλεια, *palumbus*. The Slavic *goląbĭ* looks too like the Latin not to be borrowed from the language of the rulers of the world and Christendom, especially as in the Lithuanian *gulbe*, swan, we have the form and sense in which alone the word could be original in those Eastern parts. The softening of *c* into *g*, not unheard of in other cases, is of little weight against the historical reasons that speak for the word being borrowed. We cannot yet determine whether the Goths received their enigmatic *ahaks* (περιστερά) from the European West, or from the Asiatic East (Diefenbach sub. v.; compare also O. Irish *caog*, jackdaw (St., Ir. Gl. 201), and Lith. *kogas*, carrion crow). The Lithuanian has two other names for a pigeon, both it seems of merely local use: *karvélis* and *balàndis*. I do not know if the latter can be identified with the Ossetic *balán* (in the other dialect *balón*, *baluon*); it has also passed into Livonian (Wiedemann in the *Bulletin der Petersburger Akademie*, p. 694, 1859), while the Lettic and Esthonian names for the tame pigeon are derived from the German. The Lithuanians and Slavs name the heath-cock from its deafness: Lith. *kurtinys*, deaf and heath-cock; from Slavic *glukhŭ*, deaf, come the Russ. *glukhari*, Pol. *gluszec*, Slovèn *hluchan*, etc., heath-cock. But as this bird in breeding time really seems as if deaf, the relation of *taub*, deaf, to *taube*, dove, must be different.

NOTE 70, PAGE 265.

When Clytus the Aristotelian, in his work on Miletus (in *Athen.* 12, p. 540), relates that Polycrates brought together in Samos the products of all countries (ὑπὸ τρυφῆς τὰ πανταχόθεν συνάγειν· κύνας μὲν ἐξ Ἠπείρου, αἶγας δὲ ἐκ Σκύρου, ἐκ δὲ Μιλήτου πρόβατα, ὗς δὲ ἐκ Σικελίας), we see that the tyrant was bent upon improving the breeds of animals, though it was set down to mere luxury (τρυφή); but there is nothing about the peacock to be inferred from the report. It may have been passed over for one of two opposite reasons, either because it already existed in the island, or because it was still unknown to Polycrates and the Samians; it is also a mere creature of luxury, which might indeed have suited τρυφή, but had nothing to do with the really economic labours of the tyrant.

NOTE 71, PAGE 265.

As Antiphon was executed in the year 411, the "thirty years

and more" would take us back to an earlier date than we have supposed (440) for Athens's first acquaintance with the peacock. But the oration on peafowls can hardly be by Antiphon himself; it was more likely made after his death, though not long after.

NOTE 72, PAGE 286.

It is interesting to observe how new and popular names were created for the falcon in the earliest Middle Ages, when falconry became a favourite pastime. These names then migrated from land to land. One of the Mid. Latin names, which is first met with in Servius, was *falco*, which passed into most European languages; its model was the Greek ἅρπη, which signified both a bird of prey and a sickle. *Accipiter* was traced to *accipere*, and therefore used also in the form *acceptor*, as though it meant the *receiver* of the bird when it flew up; and in the same way *habich*, *hawk*, was supposed to come from *haben*, to *have*. From *capere* was formed a short name quite common in Mid. Latin, *capus;* the note in Servius declaring that it was an old Etruscan word—in which case it must have suddenly reappeared after centuries of disuse—and that Capua was named after it, can only be received with a shake of the head. For the Spanish *gavilan*, perhaps derived from *capus*, see Diez in the Dictionary. The Mid. Latin *gyro falco*, so called from circling (*gyrus*, *gyrare*), Italian *girfalco*, French *gerfaut*, gave the Germans their *geier* (see Diez). A very widespread European word, *sacer*—and probably also the German *weihe*, O. H. Germ. *wîo*, *wîgo*, *wîho*—is simply a mistranslation of the Greek ἱέραξ (quasi ἱερός): Mid. Latin *sacer*, Italian *sagro*, French and Span. *sacre*, Mid. H. Germ. *sackerfalk*, Mid. Greek σάκρε. The same word penetrated the East: Arabic *sakr*, Persic *sonkor*, Kurd. *sakkar*, Slav. *sokolŭ*, Lith. *sakalas*. In Aristotle ἀστερίας, starred, spotted, is a mere attributive to ἱέραξ, but it is also used substantively as the name of a kind of bird of prey. The same word appears quite late in Latin in the form *astur* (the ending probably occasioned by *vultur*, or the national name *Astur*, an Asturian); from this is formed in an irregular manner, to avoid the similarity of sound with *astro*, star, the Italian *astore*, Provençal *austor*, O. French *ostor*, now *autour* (which Diez prefers to derive from *acceptor*, in which case also the words would not be according to rule), and the Slavic words for hawk; Slav. *yastrąbŭ*, Serv. *yastreb*, *yastrob*, Russ. *yastreb*, Pol. *jastrząb*, etc. The Lithuanian and Lettish name *wannagus*, *wannags*, for falcon, is evidently borrowed from the Germanic languages; it is a sacred bird of prey, "for whom *wannen* (tubs) used to be hung outside the houses to build his nest in" (Grimm, p. 50), O. H. Germ.

wannoweho, *wannunwechel*, Latin *tinunculus* from *tina*, vessel. *Wanne* itself is borrowed from the Latin *vannus:* word and custom were Italian. In Layard's book, mentioned in the text, we find on p. 366 and following, not only full and very interesting accounts of falconry as now practised in the East, but also a number of names for the species and varieties used there. Among these, *tchark* is probably the Greek κίρκος, Slavic *kretchet*. This *tchark*, the common falcon of the Bedouins, " seizes his prey on the ground, except the eagle, at which he is flown in the air. It chases principally gazelles and trappes, but also hares and other game." This, then, is hunting hares with falcons, just as Ktesias relates ; when gazelles are hunted, greyhound and falcon usually work together.

NOTE 73, PAGE 293.

In his *Synopsis Floræ classicae*, Fraas incorrectly states that the ancients were already acquainted with the white mulberry. Æschylus only speaks of white, reddish, and dark-red berries hanging in different stages of maturity at the same time on the tree : ταὐτοῦ χρόνου ; Ovid in his fable only explains the origin of the red colour, just as he makes the black feathers of the raven proceed by metamorphosis from the former white ones ; the Geoponica, 10, 69, only tells how to give mulberries a white colour by grafting on a λεύκη, that is, a white poplar, one of the tricks of which that collection is full. Throughout the Middle Ages there is no certain trace of the *Morus alba* to be found in Europe—see Ritter, *Erdkunde*, 17, 495, who in vain sought for such. Also in Albertus Magnus, *De Vegetabilibus*, 6, 143, only the *Morus nigra* is described, not the *Morus alba*, as the latest editor supposes.

NOTE 74, PAGE 298.

If *corylus*, *corulus*, arose in Latin fashion from *cosilus*, and is therefore the O. H. Germ. *hasal*, hazel, and the O. Gallic *cosl* (Zeuss, ed. 2, p. 1077), κάστανον might be the same word in a Pontic language, only with another suffix. The Albanian *arre*, nut, nut-tree, reminds us of the glosses in Hesychius : ἄρυα· τὰ ἡρακλεωτικ κάρυα, and αὐαρὰ· τὰ ποντικὰ κάρυα. As there is a dialectic by-form *kharre*, *arre* must have dropped its *k*, and is therefore the same word as κάρυον. The Slav. *orachŭ*, *orechŭ*, Lith. *reszutas*, *reszutys*, nut, carries us back to Persia : *aragh*, nut. Even Diez knows nothing certain about the Romance expressions, Italian *marrone*, French *marron*. According to Movers, 1, 578, 586, ἀμυγδάλη was the Semitic name of the Phrygian Cybele,

and meant *great mother;* in fact, the wakeful almond tree, that is, the early-blooming, the first to wake from the winter's sleep, sprang from the blood of the mother of the gods. The Laconic *μύκηρος*, *μούκηρος*, nut almond, which seems to be identical with the rare Latin *nuceres*, *nucerum* (gen. pl., Cœlius in Charis, 1, 40), points to a native Greek derivation. If we compare it with *μύσσω*, *μύξα*, Latin *mucus*, the meaning would be soft, shiny fruit, just as a kind of plum was called *myxa*, *myxum*.

NOTE 75, PAGE 303.

The mistletoe, O. H. Germ. *mistil*, was a very sacred Druidical plant, and the very slight traces in the German myth of a similar regard for it can only be a reflex from the Celtic land, especially as the Slavonian popular religion altogether disregards the mistletoe. The word also is probably a stranger in Germany, and the same as *viscus*, *visculus;* but we will not decide *where* the change of the *v* into *m* took place. Another plant used by the Druids for superstitious healing was called *samolus* (Diefenbach O. E. 416); if we imagine this word afterwards stripped of its initial *s* (by transition into *h*), it will agree with the Lithuano-Slavic names of the mistletoe: Lith. *amalis*, *emalas*, Lett. *âmuls*, Pruss. *emelno*, Slav. *omela*. The French *griotte*, sour cherry, is *agriotta* in Italian, and therefore derived from *acer;* *merise*, bird-cherry, seems, like the Italian *amarina*, *amarasca*, *marasca*, to refer to *amarus*, bitter. In the Magyar language the sour cherry is *medgy*, the cherry-tree *medgyfa*—whence comes this?

NOTE 76, PAGE 311.

Late writers have supposed that this rhododendron of Pliny was one of *our* kinds of rhododendron, as Tournefort thought, or the *Azalea Pontica* (see E. Meyer, *Botanische Erläuterungen zu Strabo's Geographie*, p. 59; and Langkavel, *Botanik der späteren Griechen*, p. 65). One may ascribe the bad effects of the Pontic honey as a fact to whatever plant one likes; but by rhododendron the ancients always meant the *Nerium oleander*, and one has no right to substitute any other plant of which they did not mean to speak and could not have spoken.

NOTE 77, PAGE 311.

We are prevented from believing with the latest editor, O. Ribbeck, in the authenticity of the "Culex," by the character of the poem, which evinces rather conceited over-ripeness than youthful immaturity. The very first verses could only be written by one who had already seen the Georgics and Æneid, or at least the Eclogues:

"*Posterius graviore sono tibi musa loquetur*
Nostra, dabunt quom maturos mihi tempora fructus,
Ut tibi digna tuo poliantur carmina sensu;"

and remind us of Frederick the Great's speech to his generals at the beginning of the Seven Years' War: "Now we open the Seven Years' War!" The very word *rhododaphne* is suspicious; if the young Virgil had known it, we should have read it in later poets, for example, in Ovid, especially as it fits hexameter verse.

NOTE 78, PAGE 312.

So thinks Benfey, 2, 79, who explains πιστάκη, πιστάκιον as *rich in flour*. From the gloss in Hesychius: βίσταξ· ὁ βασιλεύς παρὰ Πέρσαις, early writers thought the word meant as much as *regiae nuces*, as κάρυα βασιλικά was used for a kind of nut or walnut (Persic *péshdâd*, Pehlvi *péshdât*, Zend. *paradhâta*). The first letter is by turns π, φ, β, and even Ψ; according to Steph. Byz. there stood on the Tigris a town Ψιττακή, so-called from the Pistacios that grew there. Τερέβινθος, τέρμινθος, is probably also a Persian word, to which the change of *b* into *m* points, a change that commonly took place in transferring Persian names to Greek. See Pott, *Kurdische Studien*, in Lassen's *Zeitschr.*, 6, p. 63. The Kurdic *dariben* there quoted can hardly be borrowed from the Greek, for it is a mighty forest-tree native in Kurdistan. Polak, *Persien*, 2, 155, says: "Besides numerous terebinth-trees, which furnish the well-known sakkes-resin, Kurdistan possesses large oak-forests.

NOTE 79, PAGE 339.

The cultivation of oranges has now become an important branch of production in Italy. According to Langenbach's lecture before the Berlin Geographical Society, Nov. 2, 1872, Palermo exported twenty-two million kilogrammes of fruit in 1864, and thirty-seven millions in 1867; the present quantity is about sixty million kilogrammes. Two-thirds of this fruit is sent to the United States.

NOTE 80, PAGE 343.

Ælian—no great authority, it is true—declares the word to be Iberian, N. A., 13, 15: κόνικλος ὄνομα αὐτῷ· οὔκ εἰμι δὲ ποιητὴς ὀνομάτων, ὅθεν καὶ ἐν τῇδε τῇ συγγραφῇ φυλάττω τὴν ἐπωνυμίαν τὴν ἐξ ἀρχῆς, ἥνπερ οὖν Ἴβηρες οἱ Ἑσπέριοι ἔθεντό οἱ, παρ' οἷς καὶ γίνεταί τε καὶ ἔστι πάμπολυς. The Iberian race, its branches and their distribution, its language in its

oldest remains and in its present modern condition, are still awaiting a Caspar Zeuss who shall raise them, by the means and methods of modern science, out of the obscurity in which they are hidden, as Zeuss did the origin of the Central European nations, and the language of the Celts. But since W. Humboldt the Basque language has been left in the hands of French and Spanish dilettanti ; in Germany, where formal preparation might be expected, only the primitive history of the Germans has flourished much since Zeuss, yet the boundaries marked out by that great inquirer more than forty years ago have scarcely anywhere been shifted or overthrown. From out the flood of opposing hypotheses and corrections, his "Germans and the neighbouring races" has always re-emerged. One example may serve; what is become of our *Mongolian* Scythians? have they not become Iranians again, as Zeuss, with a few master-strokes, made them out to be? The Orphic verse, which Stockes applied to his Celtic grammar:

Ζεὺς ἀρχή, Ζεὺς μέσσα, Διὸς δ' ἐκ πάντα τέτυκται,

is applicable also to that ethnographic work, which was left in the background, while the rival "History of the German Language" passed through several editions, and its contents into popular hand-books—no good sign ! Would that part of the busy and generally vain efforts thus expended had been bestowed upon the Iberians or Albanians, a field where the piled-up and half-buried ruins promise the richest discoveries !

NOTE 81, PAGE 345.

All that zoology can at present tell us regarding the original distribution of the *lepus cuniculus* is to be found complete in the learned monograph by J. F. Brandt : Researches on the Rabbit, etc. (*Mélanges Biologiques* of the Petersburg Academy of Sciences, T., 9, 1875). As the rabbit easily runs wild, and then becomes so like the really wild animal that no difference can be discovered (p. 481), it is impossible to draw any conclusions from its present distribution. It is true that fossil remains of the rabbit from the diluvial time are said to be found in Western Europe from Portugal to England and Germany ; but that is long ago, and the increasing cold in the North meanwhile destroyed the animal, which is very sensitive to a low temperature. It cannot have existed in a wild state in Greece and Italy within historic times, because in that case the Greeks and Romans would not have passed it over in silence; on the other hand, it is present in all Iberian countries, and closely connected with the Iberian race.

It is related of the tyrant Anaxilas of Rhegium, who also conquered the town of Zankle (afterwards called Messana) that he naturalized the

hare in Sicily, and therefore had his coins stamped with the figure of that animal. Was the hare wanting in the island until that time? One might suppose that rabbits were meant, which the tyrant had colonized near Messina, but the coins distinctly show a hare in full career.

A Greek name for the rabbit, λεβηρίς, which Strabo does not limit to any district (*τῶν γεωρύχων λαγιδέων οὓς ἔνιοι λεβηρίδας προσαγορεύουσι*), is declared by Erotianus, following Polemarchus, to be Massaliote: ὃ Ῥωμαῖοι *μὲν κούνικλον καλοῦσι*, Μασσαλιῶται *δὲ λεβηρίδα*. If there really was an Æolic, that is, Old Greek word λέπορις for hare, there might grow up out of it, among the early Greek colonists on the coasts of Spain and Provence, a λεβηρίς, with a soft labial, as λεβηρίς, in the other sense of skin, slough, is related to λέπειν, to peel, λοπός, husk, shell. But if the Latin *lepus* was the only root, we should have here one of those words which appeared in the Sicilian-Italiote colonial language, namely, a Grecianized Latin term, whose form was determined by λεβηρίς, skin; but then it would not be exclusively Massaliote. It is very remarkable that *laurix*, which disappeared in the Romance languages and in Middle Latin, is found again in O. H. German glosses: *lorichi*, *lorichin*, with the meaning of *cuniculus*. If laurix was only another form or pronunciation of λεβηρίς—and ground enough for such a supposition might be found in the dialects, unknown to us, spoken between Gades and Massilia—then either *laurix* must also be a Græco-Roman, or λεβηρίς also an Iberian word. The English *rabbit*, and French *rabouillère*, rabbit-hedge, are derived from a Celtic name (see Müller, *Etymol. Wörterb. der Englischen Sprache*). The distortion of *cuniculus* in the Lithuano-Slavic languages makes a pretty contribution to Folk-etymology: Lith. *kralikkas*; Russ. *korolek*, *krolik*; Pol. *krolik*, etc., that is, little king. Charlemagne surely never dreamt that his name would serve to distinguish the rabbit on the other side of the Oder! But perhaps these expressions are only translations of the *küniglein*, common in older German, Mid. H. Germ. *künolt* (see Pott, *Doppelung*, p. 82), forms that also owe their existence to Folk-etymology.

NOTE 82, PAGE 347.

"When Alkmena," relates Antoninus Liberalis, 29, "could not give birth to Herakles because the Moirai and Eileithyia hindered the birth, Galinthias (in Ovid, *Met.*, 9, 306, she is called Galanthis) tricked the goddesses so that the child was born; for which she was punished, by being changed into a weasel, γαλῆ. But Hekatē pitied her, and made her her own sacred servant. And when Herakles was grown up, he

remembered her help, erected a sanctuary to her, and sacrificed to her. The Thebans observe the custom to this day, and before the feast of Herakles they first sacrifice to Galinthias." Ælian, N.A., 15, 11, on the other hand, relates: "I have heard that the weasel was once a woman, practised magic and poisonings, and was unbridled in illicit love; the anger of the goddess Hekatē changed her into this wicked animal. This I have heard tell." Contrariwise, in the 32nd Fable of Babrius, the weasel is changed by Aphrodite into a beautiful girl, who, on her wedding day, betrays what she really is—a weasel. The Comic poet, Strattis, who exhibited plays from Ol. 92 to Ol. 99, alludes to this fable. (Meineke, *Fr. con. gr.*, 2, 2, 790.)

This tale of transformation has travelled far, and is echoed in the names borne by the weasel in many European languages. It is called *the little maiden;* Ital. *donnola;* Mod. Greek *νυμφύτα*; Germ. *schönthierlein*, pretty beastie, *schöndinglein*, pretty little thing; Danish *den kjönne*, the beauty; O. Eng. *fairy;* Span. *comadreja*, cummer gossip (=*commatercula*); Basque *andereigerra* (andrea=woman), Albanian "the brother's wife," Slav. *lastotchka*, the friendly or deceitful (from *laskati*, to flatter, *lĭstiti* to deceive; the swallow is called so too), Slav. *nevestŭka*, bride or maiden, etc. In many Italian dialects the names are derived from the Latin *bellula* (see Flechia in the *Archivio glottologico* Italiano II. p. 47). *Ness* (Zeuss, ed. 2, 49), and *eás* (St., I. Gl., 259) are Celtic words, the latter, if it has lost an initial *v* (Zeuss, ed. 2, 55), is perhaps identical with O. H. Germ. *wisula*, *wisala*. The Cornish-Breton names quoted by Zeuss, ed. 2, 1075, seem to contain the notion of merry, quick. Very obscure names are the Portug. *tourão;* Span. *garduña*, Lith. *zébénksztis* (rather the brown weasel), *szarmonys*, *szermonys* (rather the white, identical with Germ. *hermelin*, ermine, from *harm*); O. Pruss. *mosuco* (Germ. *mösch*, *müsch*, perhaps like *Mus Moscoviticus*) Albanian *bukljeza*. They may contain euphemistic circumlocutions; for the weasel, because of its swiftness and subterranean habits, is imagined as a dæmonic animal, and such a one must not be *named*, or it will appear. The Latin *felis* appears in the Cymric *bele*, martin, from which comes the French *belette*, weasel (see Diez, sub v., and Diefenbach, O. E., p. 259); Germ. *bille*, *bilchmaus*, O. H. Germ. *pilih;* Lith. *pele;* Old Pruss. *peles*, mouse; Slav. *plŭchŭ*, dormouse, etc.

NOTE 83, PAGE 351.

Fr. Müller, in the *Sitzungsber. der Philosophisch-histor. Klasse der Wiener Acad.*, vol. xlii., p. 250, 1863, translates the Zendic *gadhwa*, which often occurs in the Vendîdâd, by "cat;" and Spiegel, in Kuhn's *Zeitschrift*, 13, 369, agrees with him. To this Justi objects, that the

Huzvaresh translation gives "dog" for *gadhwa*, and that the cat first appeared in Asia during the Middle Ages. And, in fact, all the Asiatic names of the animal, both in the Semitic languages and in Armenian, Ossetic, Persic, Turkish, etc., are in the last instance derived from Byzantine Greek, which itself borrowed its name from the Latin. It is significant for the chronology of the word, that *catus* exists in all the Romance languages except Wallachian alone: it came up when Dacia was already the prey of the barbarians, and the Latin spoken there was isolated. On other forms that are pretty widely diffused, Ital. *micio*, Germ. *mieze*, Slav. *matchĭka*, etc., see Diez, Weigand, and Miklosich under the words. As the meaning of "little Mary" is hidden in the German *miezchen*, and "little Matthias" in the Bohemian *macek*, so in Russia the cat is called *vasĭka*, little Basil, or *mishka*, little Michael. (See also Albert Höfer, *Deutsche Namen des Katers*, in the *Germania*, 2, 168; and Grimm's Dictionary, with regard to the name *buse*, *bise*, widely spread among Germans and Celts).

NOTE 84, PAGE 352.

Here we follow the common opinion, namely, that *tasso*, *taxo*, *taxus*, badger, came from the German into the Romance and Middle Latin languages. Grimm, in his *Grammatik*, 2, 40, derives the word *dachs*, badger, from the Mid. H. Germ. verb *dëhsen*, to swingle flax, *linum vertere*, *circumagere*. This *dëhsen*, with the frequent Teutonic addition of an *s*, is identical with Lith. *tekinti*, to turn, Slav. *totchiti* circumvolvere, *tokarĭ*, turner; and, like *deichsel*, A. Sax. *thisl*, thill or pole of a waggon, and Gothic *thaho*, clay—that is, stuff to be formed or turned; it runs into the large many-branched stem to which τέχνη, τέκτων, τεύχω, τύκος, etc., belong. The badger was called the turner because he digs his house in the earth, and is therefore an artist, an architect. This explanation is supported by the Greek τρόχος in Aristotle, *De Gener. Anim.*, 3, 6, in which word lies, not only the simple meaning of runner, but also of turner, one who runs round (compare τροχός wheel, potter's-wheel; the *läufer* runner, in the mill, *i.e.*, upper stone, and among rope-makers, etc.)

But there is a doubt whether *dachs* was not rather Celtic, and the animal already popular among that people. The fat of the badger, to which popular superstition attributed particular effects, is already praised by Serenus Sammonicus:

"*Nec spernendus adeps, dederit quem bestia meles*,"

where *meles* can only mean the badger. Marcellus Empiricus also prescribes a dose of badger-fat, *adipis taxoninae*; at that rate, the

German word must have found its way into Latin by the fourth century. Still farther back, about 100 B.C., is the quotation from Afranius in Isidore, 20, 2: "*Taxea lardum est Gallice dictum; unde et Afranius in Rosa: 'Gallum sagatum pingui pastum taxea.'*" Nourished on badger's fat?

Other names for this animal lead us no farther. The English say *badger*—that is, corn-trader; the French likewise *blaireau*—that is, *bladarius;* the Italians say *grajo* (perhaps the same as *agrarius*); the Scandinavians and Netherlanders *grävling*, *grevinc*—that is, digger, all euphemisms. The Danish-Swedish *brock* is the same in English, and *broch* in Cambrian and Cornish; if this be a case of borrowing, did the word run with the parallels of latitude from east to west—that is, from Scandinavia to Britain, say, with the incursions of the Danes; or in the opposite direction, from the ancient Britons to the North Germans? The Russian *barsuk*, Polish *borsuk*, seems of Persian or Turkish origin, as *bars* (leopard) is an Asiatic word; with the latter agrees the Magyar *borz*, badger. The Slavic *yazvŭ* and the Lithuanian words: O. Pruss. *wobsdus*, Lith. *obszrus*, Lett. *âpsis*, are obscure, though they certainly were full of meaning once.

The late arrival of the Hamster from the East is unmistakable. It is still wanting in many parts of Germany, but is frequent in the corn-growing countries of Eastern Europe. From the Russian *khomiak*, Polish *chomik*, and still more closely from the "*chomestarŭ*, animal quoddam," noted by Miklosich, is derived from the German *hamster*, O. H. Germ. *hamastro*, *hamistro*. Also the Russian *karbysch*, hamster, sounds as if derived from a Tartar source. The O. Pruss. *dutkis*, and Lith. *balesas*, cannot be understood.

NOTE 85, PAGE 352.

The same is true of the productions of language: our language availed itself of the difference between the High German and the Low German stage of consonant to distinguish between *katze*, female cat, and *kater*, male cat; and added, by a kind of vowel-change, *Die Katze kiezt, hat gekiezt*, the cat has kittened.

NOTE 86, PAGE 355.

The Greek *βούβαλις*, *βούβαλος*, is undoubtedly roe, antelope, gazelle, and not an animal of the Neat kind. We find already in Æschylus, Fr. 322, Nauck:

λεοντοχόραν βούβαλιν νεαίτερον,

the young antelope which serves as food for the lion. To those

animals, says Aristotle, *De Part. Anim.*, 3, 2, whose horns are useless for defence, Nature gave another means of safety, speed—thus to stags, antelopes, βουβάλοις, roes, δορκάσι, which last occasionally stand at bay and threaten with their horns, but take flight before strong beasts of prey. These animals are especially native to Africa. There, according to Herodotus, 4, 192, live πύγαργοι καὶ ζορκάδες καὶ βουβάλιες καὶ ὄνοι, and Polybius, 12, 3, 5, adds: "Who has not told us of the great cats of Africa, and the beauty of the antelopes (giraffes?), βουβάλων τ' ἄλλος, and the size of the ostriches?" In Italy the people began to distinguish by this Greek word the ure-ox and wisent of the German forests, which have nothing in common with the nimble roe, Mart., *Epigr.*, 23. 4:

"*Illi cessit atrox bubalus atque bison.*"

Pliny blames this as a misuse of names, remarking that the *bubali* are rather African animals, more like the calf and stag (8, 38: "*Quibus* (uris) *imperitum volgus bubalorum nomen inponit, cum id gignat Africa vituli potius cervique quadam similitudine*"). This confounding of names, which probably arose from the similarity of the first part of the word to *bos*, *bovis*, was retained, in spite of Pliny, in the following century, as we learn from passages in later authors; and when the buffalo appeared in Italy under the Longobards, it found the name ready made. The history of the word would in this way run a natural course, if the Slavic languages did not interfere and make us doubtful; Slav. *byvolŭ*, Russ. *buyvol*, the ure-ox; Pol. *bawol*, Bulgar. *bivol*, Magyar *bival*, Alban. *bual*, Greek βούβαλος. "It is not to be doubted that these words belong together; but it is difficult to decide whether and on whose part there was borrowing" (Miklosich). The Slavs, in the primitive time, must certainly have known and named both kinds of wild bulls in their native woods; but when they moved into the Danube-lands, the ure-ox was very scarce there, and became more and more so in the course of the Middle Ages, not only there, but in the original home of the race. They forgot the old names, and afterwards adopted the Græco-Latin ones, just as, among the Germans, the old word *elch*, elk, had quite disappeared, and has since been replaced by the Slavo-Lithuanian *elen*. The resemblance of sound to *volŭ*, bull, probably had an effect in the form of the word (see other names and compounds in Pott, E. F., ed. 2, II., 1, 808). We will add that those who may be inclined to understand the *bubali* of Paulus Draconius as meaning North European ure-oxen, because he also mentions *equi silvatici*, must put off the arrival of the buffalo in Italy till the time of the Arabs or the Crusades. Humboldt adopted the latter view: *Kosmos*, 2, 191: "Of the Indian buffalo, which was not

introduced into Europe till the time of the Crusades." Link makes the buffalo come in with the hordes of Attila.

NOTE 87, PAGE 362.

For some years there has been published at Nürnberg an *Allgemeine Hopfenzeitung*, in 4°. Unfortunately we have never set eyes on this doubtless very interesting journal. It will surely contain a full explanation of the difficult questions treated in the text—as one cannot suppose that the editors notice only the most profitable fields of production, and the prices in the various markets, and have never inquired whence the herb that gives them employment and sustenance was originally derived, by whom it was named, and who first mixed it with beer.

NOTE 88, PAGE 367.

The following little scene in the Metamorphoses of Apuleius (towards the end of the 9th book) throws a light on the military system of the Roman Empire. A *hortularius* is walking home along the highway with his unladen ass. There meets him a stalwart soldier, *miles e legione*, and imperiously demands where he is taking the donkey to. The peasant, ignorant of Latin (for the scene is in a Greek country), answers nothing, but quietly goes on his way. Angry at his silence, the soldier applies the *vitis* which he carries in his hand, to the backs of the ass and its master. Then the peasant piteously excuses himself, that, not knowing the language, he had not understood what his honour had said. The soldier then says in Greek: "Where are you taking that ass to?" The peasant replies, "To the next village." "But," answers the soldier, "I require the ass; it must help to carry the baggage of our commandant, *praesidis nostri*, to the fort." And he seizes the animal's bridle to lead it away. Prayers are of no avail; on the contrary, the soldier turns his *vitis* round to break the peasant's skull with its thick, knobby end. Then it is related how the peasant takes courage from despair, thrashes the soldier, takes away his *spatha*, leaves him lying black and blue with blows, and flies to hide himself at the house of a friend in the village. But other soldiers have come to the help of their half-dead comrade, the magistrates are roused, the criminal's hiding-place is discovered, and he thrown into the *publicus carcer* to await his execution. Our "New-German militarism," as it is called, does not come up to this by a long way yet.

NOTE 89, PAGE 384.

The name of Turkish wheat and the extensive propagation of maize, not only in the Levant, but in Eastern Asia and the interior of Africa, have often provoked the heretical assertion that this corn did not originally come from America, but was an old possession of the Eastern hemisphere. Fraas, in his *Synopsis Florœ class.*, brings forward all sorts of insufficient arguments in favour of it; and the same view held by Bonafous is triumphantly refuted by Alph. de Candolle, in the *Géographie Botanique*, p. 943. At the beginning of the sixteenth century, Turkish only meant foreign, or come from over the sea; at that time geographical ideas were too indefinite to distinguish exactly the West from the East Indies, and both from the land of the Turks. To this day the English call a bird that undoubtedly came from America *turkey*-cock (as they call maize Indian-corn); to the Germans he is *kalkutischer*-cock, as if he had come from Kalekut, while the Turks calls him Egyptian-cock (Pott, *Beiträge*, 6, 323).

NOTE 90, PAGE 385.

If it be true that *holcus sorgum* can be recognised in an ancient Egyptian painting (A. Thaer, *Die Alt. Egyptische Landwirthschaft*, p. 19, Berlin, 1881), and that grains of it have been found in the graves of mummies, this fruit must in the course of time have withdrawn from Egypt to the regions of the Upper Nile. For the Arabian physician, Abd-Allatif, of Bagdad, who was born in 1161, and whose description of Egypt has been published by S. de Sacy, says expressly, page 32, that neither of the two kinds of black millet existed in Egypt, except in the upper district of the Saïd, where the *dochn* was particularly cultivated. And, what is still more striking, even Prosper Alpinus, towards the end of the sixteenth century, found there no other bread than that made of wheat: *ibi enim nulla alia panis genera cognoscuntur quam ex tritico parata.* It would also not have been necessary to resort to India in the time of Pliny, if sorgum was to be found in Egypt. But as the commerce of the Red Sea ports with India was far from being unimportant under the rule of the Romans, corn that came from Upper Egypt might be erroneously supposed to have been introduced *through* Egypt from India

NOTE 91, PAGE 390.

O. Hartwig, in his beautiful "Pictures of Culture and History from Sicily," remarks, with reference to Arabian cultivation in Sicily, that produce must necessarily increase where new plants are introduced.

If this were altogether true, it would be of the utmost importance to the general history of culture. But it is subject to many limitations. Immigrants may bring with them their favourite plants, which perhaps were the most profitable in their own country; they continue traditionally the culture they were accustomed to. A certain culture may for the moment, at a favourable juncture, yield a profit; then it is continued from sheer inertia, long after the circumstances have passed away that led to its introduction. Again, the laws regulating trade and commerce, the manner and scale of taxation, acts of government of all kinds, give directions to agriculture that are not always in harmony with the natural vocation of the soil. It will be seen that a separate calculation must be made in each particular case.

NOTE 92, PAGE 396.

When Arthur Young travelled in France, shortly before the Revolution, the potato was a vegetable almost unknown in that country; ninety-nine out of a hundred peasants, he says, would certainly have refused to taste one.

NOTE 93, PAGE 396.

Moltke, in his letters from Turkey, shrewdly observes that the tobacco-pipe was the magic wand that changed the Turks from one of the most turbulent nations into one of the quietest. Violence done to nature is certainly the first rude form in which man emancipates himself from blind impulse; and on that ground we may hail all the horrors and abominations that savage peoples commit against their own bodies as a movement towards freedom. Opium, tobacco, brandy, hemp, toad-stool, etc., break the wildness, but replace it by dulness. If Moltke's observation be correct, our social democrats will shortly become tame also, for they are seldom seen without a cigar-stump in their mouths.

NOTE 94, PAGE 399.

Link, *Urwelt*, I, 428, was also of opinion that the apple-tree of our gardens was not descended from the European wild apple. The name of the apple-tree is particularly interesting, because it is the same among the Celts, Germans, Lithuanians, and Slavs, and therefore tends to prove a closer connexion on the part of the extreme western branch, the Celtic, with the Germano-Slavic branch than with the Italian. O. Celtic *aball* (*all* is a derivative element), A. Saxon *appel*, O. Norse *epli* (*apaldr*, apple-tree), O. H. Germ. *aphul*, Lith. *obolys*,

abolis, and O. Pruss. *woble*, apple; Lith. *obelis*, *abelis*, and O. Pruss. *wobalne*, apple-tree; O. Slav. *yablŭko*, *ablŭko*, apple, and *yablanĭ*, *ablanĭ*, apple-tree. If the swarms of Indo-Germans that broke into Central Europe from the East, of whom the nations afterwards called Celtic formed the vanguard, found the tree existing in the newly conquered countries, and regaled their rude palate with its sour astringent fruit, they might easily adopt the name given it by the hunting and fishing nation which they first encountered on European soil—the Finns. Of course that name is only known to us in its latest form, and we do not know what changes it has gone through; Esth. *ubin*, *uvin*, and in the other dialect *aun*, *oun*; Livon. *umārs*, Finnish *omena*, Magyar *alma* (same in Turkish). When the study of the Finnic idioms is so far advanced, that by comparing the different branches of the stock we shall have obtained fixed laws of sound, from which conclusions can be drawn as to the primitive form of a given word, then also it can be decided whether the resemblances in the above forms of names are only accidental or prove a real connexion. In Greek and Latin the apple has really no individual name, for the Greek *μᾶλον*, Latin *mālum*, meant large tree, fruit in general, and only gradually became confined to the apple; and the same holds good of the Latin *pomum*; *malum* has also the appearance of being borrowed from the Greek.

The wild Pear-tree native to the southern peninsulas—the Arcadians are said to have fed on pears as well as acorns—was called *ἀχράς*, *ἄχερδος*; the cultivated was *ὄγχνη* (already in Homer), *κόγχνη* (Hesychius), also *ἄπιος*, and the fruit *ἄπιον*. Comparing the last word with the Latin *pirus*, *pirum*, we see that an *s* had dropped out of the Greek word (just as *ἰός*, *i.e.*, *Fῖσός*, poison, is *vīrus* in Latin), and the *a* is only the non-significant prefix that the Greek is so fond of. The Latin word passed over to the Celts and Germans, proving that the pear-tree did not originally grow in the home of either nation. But the Lithuanians and Slavs have a word of their own for the pear. Lith. *krausze*, O. Pruss. *crausios*, Slav. *grusha*, *chrusa*. As it is not to be supposed that the Slavs can have known and named a tree that did not exist in the milder abodes of the Celts and Germans, this *grusha* must be a borrowed word—but whence? probably from one of the Pontic or Caspian languages, for it surely cannot be connected with *ἀχράς*, *ἀχράδος*. The Albanians have also their own word for the pear, *darde*.

In modern Europe we look upon North France, and especially Normandy, as the true apple and pear country, which not only bears the most, but the finest fruit, and where cider (*cidre*, Ital. *sidro*, *cidro*, from *sicera*, *σίκερα*, itself an old Semitic word) takes the place of wine

as a common beverage. Farther south, though that is where they came from, these fruit-trees do not thrive so well—a phenomenon by no means rare, but none the less remarkable.

NOTE 95, PAGE 402.

The hunter, silent and shy ("*Im Felde schleich ich still und wild*"), has still much of the beast of prey in him. But the breeding of animals is already full of humanity; look at H. Bürkel's painting in the New Pinakothek, at Munich: *A flock of sheep in the Roman campagna.* The shepherd walks *before*, the flock *follows;* he carefully holds a new-born lamb in his arms, others lie in baskets slung across the horse's back; their mothers run bleating on both sides. How human and idyllic!

NOTE 96, PAGE 404.

Besides complexion, the *oculi truces*, the *torvitas luminum*, are spoken of as marks of the Germanic and other barbarians of the North. It is culture that awakens the inner life, and first gives soul to the eye, which, in the inhabitants of woods and steppes, has still the peculiar wide-awake look of the hunted animal, or the keen glance of the bird-of-prey. Vambéry, *Globus*, 1870, p. 29, says of the Kurd: "It is especially the eyes, those ever-sparkling lights, meditating mischief or fraud, that you may know him by among hundreds of Asiatics. It is remarkable that both the Bedouin and the Turkoman may likewise be distinguished by these signs from kindred races that lead a settled life. Is it the insuperable hatred of four walls, or the boundless horizon, or a life in the open air, that conjures this glitter into the eyes of Nomads?"

END OF THE NOTES.

INDEX.

ABBREVIATIONS.

AS., Anglo-Saxon; conn., connected; fr., from; G., German; OG., Old German; ON., Old Norse; Sl., Slavic; Ssk., Sanskrit.

PAGE

*Ἄβαγνα (rose) . . . 475-6
Aball, abolis, woble, abluko (apple) 498-9
Abantis, Amantia; Abydon, Amydon. 459
Acacia: Jotham's "bramble," 131; American acacia . 394-5
Acarnanians: half-Hellenic . 61
Accipiter, acceptor (hawk) . . 486
Acer, acernus, ahorn, yavor (maple) 481
Acetum (vinegar): akeit, oced, G. ehiz, ezih 79
Ἀχράς, ἄχερδος (wild pear). . 499
Acnua, actus (120 ft.) . . . 438
Ἀδάμας, adamant, diamond; elmâs, almáz 478
Aes, aiz, îarn, Ssk. ayas . . 445
Ætolians: half-Hellenic . . 61
Africae aves (guinea-fowl) . . 273
Agathyrsi: tattooed . . . 33
Agave Americana (Indian fig) 18, 395
Ager: (1) arvus; (2) arbustus; (3) pascuus 104
Agricultural terms unlike in Latin and Greek 438
Agrios (wild) = shepherd . . 70
Ahaks (pigeon): conn. with caog, kogas? 485
Ahorn (maple): fr. acernus . 481

PAGE

Αἰγί-λωψ, αἰγί-πυρος, αἰγὸς κολόκυνθα 433
Αἶρα (darnel), ἐξαιροῦμαι . . 433
Αἴξ, αἰγός (goat): common to Aryans 462
Akva (horse): açva, equus, ech, eoh, 48; açpa. . . . 45
Alani: nomad Iranians, 27-8; rather fair 405
Ἀλαυνοί: fr. haloin (salt)? . 410
Alba, aube (surplice) . . . 135
Albanians: settled in Greece, 30; of Illyrian race . . . 62, 429
Albizzia julibrissin: fr. Turkey . 393
Albus (white), âlpt, ælfet, lébedĭ (swan) 259
Ale, alus, olŭ, öl: fr. oleum . 124
Ἀλέκτωρ,—τρυών (cock), gemma alectoria. . 243-4, 271, 482
Ἀλέκτωρ,—τρύων 244
Ἀλεκτρύαινα,—τορίς (hen) . . 245
Aleuads (grinders?) in Larissa . 65
Alica (gruel) . . . 379, 438
Allium (garlic) 156
Almond: came fr. W. Asia to Greece (ἀμυγδάλη), 294; to Italy (nux graeca) . . . 296
Aloe (agave Am.): came fr. America, spread round Mediterranean 18, 395

PAGE

Ἄλφι, ἄλφιτον (barley-meal), 431; unlike Latin 438
Amalis, âmuls, omela (mistletoe). 488
Ἄμη, hăma, ahm, ohm, awme . 456
America: Old World products took new start in, 383; A. gave us turkey, maize, potato, Indian fig, &c. 394-5-6
Ammazzo l'asino (oleander). . 310
Ἀμφιγυήεις (Hephæstus) . . 435
Ἀμυγδάλη (almond) = Cybele? 487-8
Anas, νᾶσσα, antis, önd, hoet, úc-ka (duck) 277
Andereigerra (weasel) . . 492
Ἀνδράχλη (arbutus): fr. ἄνθραξ . 305
Ἀνδράποδον (slave): not Homeric 447
Angles: "had no horses" . . 56
Angourion, oguréts, agurke, gherkin 239
Anke, anc-smëro (butter) . . 130
Anser, hansa, χάν, G. gans, gâss, goose, gander, géd . . . 278
Apfel-sine (sweet orange) . . 338
Apīle, avilys, uley (beehive) . 463
Ἄπιος (pear): for ἄ-πισος = pĭrus 499
Apple: native to Europe, but not reclaimed here, 399; aball, abolis, yablŭko, æppel, aphul 498-9
Apricot: came fr. Central Asia (Armeniaca), 320; to Italy (praecoqua), 321; to Spain (al-barqûq, albaricoque) . . 322
Apvynys (hop-vine),—nei (hops) 450
Aquicelos (pine-nuts in honey) . 224
Arabs: as destroyers, 27-8; of old had no horses, 42-3; discouraged vine-growing, 79, 80; still half-nomadic, 109; drink butter, 129. Introd. pomegranate, 183; saffron, 200; safflow, 201; date-palm, 202-3, 210-1; papyrus, 233; lemon, 336; orange, 337-8; carobs, 342; millet, 385; silkworm, cotton, sugar-cane, &c., 389, 390, 497-8

PAGE

Aragh, orèkhŭ, részutas (nut) . 487
Arare, ἀρόειν, arjan, arti, oráti (to ear); arvum, ἄρουρα (ear-th), 64, 104
Aratrum, ἄροτρον, orálo, rádlo (plough) 430
Arbaiths, arbeit, rabóta (labos?). 436
Arbutus (strawberry-tree) . . 305
Area (threshing-floor). . . 438
Argos 65
Aries, eris (ram) . . . 433
Aristæus invents oil . . . 95-6
Armenia: rich in horses, 46; bred mules 111
Armenians: an Iranian people, 62, 426; drank beer through pipes . . . 121, 464-5
Armeniaca, meliaca (apricot) . 322
Ἄρνες (rams; degenerate wheat) 433
Arre, kharre (nut) = κάρυα, ἄρυα, αὐαρά 487
Artichoke: reclaimed in Europe. 399
Aryans: condition on reaching Europe, 30–34; had a common word for horse, 48, for ploughing (?), 64, 429, 430-1-8, for copper, 445; lived in wicker-houses, 114–116, or underground, 32, 411-2; drank mead 126
Ash: for spear-shafts . . . 31
Asia (rye) in the Alps . . . 433
Asia Minor: Iranian in N., Semitic in S.E. . . . 426
Asilus, esel, asilas, osĭlŭ: fr. asinus, not asellus . . . 461
Asinus, ὄνος: fr. Heb. athôn, &c. 460
Ass: came fr. S.W. Asia to Greece, Italy, 110, Gaul . 111
Assyrians: invented war-chariot 43-4, 59
Ἀστερίας (Egyp. hawk), astur, austor, autour, yastreb . . 486
Auca (goose): for avica . . 351
Aurantium Olysiponense (sweet orange) 351

PAGE

Aurora, aurum : *r* for *s* . . 442
Ausis, auksas (gold) : borr. while aurum was ausum . . . 442
Auspicia ex avibus, ex tripudiis . 247
Austi (weave), udis (web) . . 442
Avars (Turkish) : ravaged Greece 29
Awme : fr. *ămη*, hăma . . 456
A-zucena (lily) : Heb. susan . 476

BADGER : reached W. Europe about fall of Rome, 352 ; names 493-4
Bad-ius, bajo, bai = spad-ix . 478
Baΐς, *βαΐον* (palm-branch) : fr. bâ, *βητ* 478
Baking : a late art ; came from S. Europe . . . 435-6
Balàndis, balán, balón (pigeon) . 485
Βαλαύστιον (pomegr. flower), balaustro, balustrade . . 474
Balkh, Bactra 29
Balsamine : came fr. India with Portuguese 393
Bang, beng, banha, Bañga . . 472
Barca (a bark) : fr. tree-bark . 468
Barley : *κρίθη*, hordeum, G. gerst 62
Barrel *versus* wine-skin, 82 ; names for . . . 454-5-6
Barsuk, borz (badger) . . 494
Bast-ropes : esp. of lime . 467-8
Bastarnæ : mixed horse and foot 57
Batavians : as riders . . . 56
Batnîm, Gen. xliii. 11 : pistachios? 312
Bean : early cultiv., 65, 440 ; Egyptian bean extinct in Egypt 232-3
Beaver, beber, biber, fiber . . 31
Beer : once common in Egypt (zythos), Spain (cerea), Thrace (brŷton), Armenia, Illyria, Pannonia (sebaia, camum), 119–122 ; then among Celts (korma, cerevisia, brace), Germans, Lithuanians, Slavs, Finns, 122–5 ; bière fr. bibĕre, 124 ;

PAGE

He and She-goat b., 359 ; additions to b. before hops . 359, 360
Beer-and-butter Europe, Wine-and-oil Europe . . . 119
Bees : only wild in Homer, 113 ; kept on trees in E. Europe . 463
Bellerophontes, Melerpanta . 459
Bellula (weasel) 492
Beng, bang (intoxication) . . 472
Béo, O. Ir. : = vīv-us . . . 407
Βίβλινος οἶνος . . . 448-9
Bibracte, Bibrax : fr. beaver . 31
Bière, G. bier, beer : fr. bibĕre . 124
Bignonia catalpa : fr. America . 395
Βίκος, *βικίον*, vicia, G. wicke, vetch 168
Bill, G. beil : fr. Celtic biail 446-7
Bird-breeding : characteristic of Latins, 277 ; declined in Mid. Ages 280
Birinj, brinz (rice) . . . 380
Birschen (coursing) : fr. O. Fr. berser 282
Biset (stockdove) : fr. bis . . 258
Βίσταξ (Pers. King ?) . . 489
Black millet : came fr. India to Italy before Pliny, again with Arabs ; despised . . . 385
Blaireau (badger) : fr. bladarius (corndealer), biada, blé . . 494
Boek-weyt, bouquette, bucail . 387
Βόγγρος, Margus, Morava . . 459
Bóghŭ (God) : fr. Iranic . . 55
Boisseau, bushel, boîte, boîter : fr. buxus 179
Bolle (onion) : fr. cipolla . . 159
Boot, booth : fr. *βοῦτις* . . 456
Bortnik, bartnik (bee-master) . 463
Both, bothan, bothie ; botte, bottle : fr. *βοῦτις* . . . 456
Βοῦβαλις,—λος : not buffalo 494-5
Βου-πλήξ (axe ?) . . 447-8
Boussole, bruxula : fr. buxus . 179
Βου-θόη in Illyria = ox-run . . 50
Βοῦτις, *βύτις*, butt, botte, bouteille ; booth, bothie, &c. 456

PAGE

Βούτυρον, butyrus, butter, 128; fr. Finn. woid? 129
Bows: of yew, 31, 407; horn . 408
Box-tree: its value, 176; came fr. W. Central Asia, 176-7-8; things made of it named after it 179
Βράβυλον (sloe) . . 287-8
Brace, braga (beer) . . 123-5
Bradigalo (hops) . . . 360
Bramble: "fire out of" . . 131
Brandy: a curse . . . 126
Braydis, bredis, βρένδος (elk, stag) 429
Bread, G. brôt (=leavened); a late invention . . 435-6-8
Breilu, breila (rose) . . . 476
Brewing, Old G. briuwan . . 125
Britons: fr. brit, breith (tattooed) 33; had war-chariots . . 58
Βρίζα (rye) . . . 428, 434
Bró, bróo, broon (quern) . . 436
Broch, brock (badger) . . 494
Βρόμος (oats), βρῶμος (goat-smell) 433
Brünne, brunjo, Sl. brŭnia (coat of mail): fr. Celtic brú (belly) 447
Βρῦτον, bruwĕle (beer, brewer) 121-5
Bubalus (buffalo), 355; βούβαλις,—λος (antelope) . 494-5
Büchse, box, &c.: fr. buxus . 179
Buckwheat: came fr. Mongolia; to N. Germany and France by sea (boekweyt, bouquette), to S. Germany by land (heidenkorn=Sl. poganka?), 386-7-8; called Turk, Saracen, heathen, Tartar, Greek . . . 387
Budini: comparatively fair . 404
Buffalo: came fr. S. Asia to Hungary, Italy, S. France . 354-5
Buklièza (weasel) . . . 492
Bulgarians (Turkish): ravaged Greece 29
Bullace: fr. Celtic . . . 288
Bullock-cart 50
Burgundy (ancient): made with resin and pitch . . . 78

PAGE

Buricus (ass, horse, mule) . . 462
Busa (Armenian beer) . 461-5
Buscione, buisson: fr. buxus . 179
Butter: unknown in Greece, 127; churned by swinging, 127-8, 465; used as ointment, 128, 130; drunk by Arabs, &c., 129; used by Germans in pastry, 129; preserved by salting, 130; fr. βούτυρον, butyrus . . 377
Buxus, πύξος (box-tree) . . 176
Βύβλινος οἶνος . . . 448-9
Byblus (papyrus): ship's tackle made of . . . 134-6-7
Βύβλος: Phœn. gybl, Heb. gobel (hill), 448, 477; Byblian colonies 449
Byvolŭ, buyvol (ure-ox); bawol, bivol (βούβαλος) . . . 495

CABBAGE: grew wild in Europe; reclaimed here (?) . . . 399
Cactus Opuntia (Indian fig) 18, 395
Cæcuban wine 82
Cælia (beer) . . . 121-5
Calamine, giallamina, G. galmei: fr. καδμεία 478
Calamus (reed), calamajo,—mita, —mistro 228
Caledonians: had small horses . 56
Calix, G. kelch, chalice . . 377
Calx, G. kalk (lime), chalk . 117
Camel: reached Africa (after A.D. 200) 203, 476
Caminus (chimney): caminata, G. kemenâte (warmed room), Sl. kómnata (room) . . . 117
Camisia, chemise: borr. fr. Gaul 144
Camum (beer) 122
Canaan, Kenaan: Phœn. Χνᾶ, Ὀχνᾶ 477
Candetum (100 ft. ?) . . . 438
Cane, canna, κάννη, Heb. kaneh: came fr. Asia to Greece, Italy, 228-230; can, canister, knaster, canal, channel, canon, cannon 229, 231

PAGE
Cannabis, chanvre; hænep, hanaf; konopélĭ (hemp) 151
Cannæ 231
Cappadocians: bred reproductive mules 111
Capri-ficus (wild fig), capreolus 432-3
Capus (falcon): fr. capĕre . . 486
Cap-ut, κεφ-αλή, AS. heaf-od, heaf-ola, ON. höf-uth . . 156
Caputium, kapústa, kabes, cabbage 377
Carat: fr. κεράτια (carob-beans) 341
Carbasus, κάρπασος (fine flax): fr. Ssk. karpása (cotton) . . 142
Cardo (N. and S. line) . . 73
Carians: took Ægean Isles, 66; cult. plane-tree, 220; reached Greece 426-7
Carnation, pink: favourite of Italians 393
Carob-tree: fr. Palestine ("husks," Luke xv. 16; "St. John's bread"), 340-1; Arab, kharub 342
Carrot: reclaimed in Europe . 399
Caryōta (nut-shaped date) . . 209
Caseus, G. käse, cheese . . 377
Caspar, Gaspar, Asper . . 240
Castanea (chestnut): whence the name? 295, 487
Castration 425
Cat, the domestic: in Egypt, 346-7; came late to Europe, 348–350; followed the rat? 351; euphemistic names . . 493
Cat-*inus*, kat-*ils*, kettle, kotĭlŭ . 461
Cattle introd. by Nomads . 356
Catus, κάττα . . . 350-1, 493
Caulis, G. kohl; caulis rāpi, G. kohlrabi 399
Cedro: citron, not cedar . 335
Celto-Iberians: mixed horse and ft. 57
Celts: had war-chariots, 58; in N. Italy, 64; made hunting an art, 282; did smith-work for Germans, 446-7; nearer to Germano-Slavs than to Greco-Latins . . 498-9
PAGE
Cepe, cæpa, κάπια (onion) . 156
Cephalo, cefaglione: fr. encephalos 207
Cepulla, cipolla, G. zwiebel, bolle 159
Cerasus, κέρασος, G. kirsche, Sl. cheréshnia (cherry), cornus, κράνεια (cornel-cherry): fr. cornu, κέρας (horn), not fr. Κερασοῦς, —οῦντος 302
Cerea, cerevisia (beer) . 121-3
Ceva (cow) 429
Chalk: fr. calx (lime) . . 117
Chao de Bux 177
Χάραξ (vine-pole) . . . 451
Chechevítsa, Russ. (lentil): fr. cicer 166-7
Cheese, G. käse, fr. caseus . 377
Χέω, χύδην, κοχυδέω, fundo (pour) 422-3
Cherry: fr. Asia Minor, 300; the sour juicy grafted on the sweet, 301; origin of names cerasus, visciola . . . 302-3
Cherry-bay: fr. Trebizond . 393
Chervil, G. kerbel: fr. caerifolium, cerfeuil . . . 377
Chestnut: came fr. Asia Minor to Greece, 294-5, Italy, Spain, S. France, 296-7; abundance no proof of being native . 297-8
Chick-peas: fr. cicer, by folk-etymology . . . 167-8
Χίλιοι = Ssk. sahasra, Zend. hazanra (?) 423
China-grass, 150; beats cotton 469
Χιτών, κιθών (tunic): fr. Phœn. kitonet (linen) . 66, 133-4, 139
Χνᾶ, Ὀχνᾶ, Canaan . . . 477
Χόνδρος (gruel), 379; unlike Latin 438
Chorasmians: equestrian nomads 47
Χρυσός (gold): Heb. and Phœn. kharûs 443
Churning 127-8, 465
Cicer, cece, chiche, G. kicher, chick-pea . . . 166-7
Ciconians in Thrace: mixed horse and foot (?), 58; gave Ulysses wine 71-2, 447

PAGE

Cider, 123; cidre, sidro, fr. sicera Heb. shâkar (to be tipsy) . 499
Cipolla, ciboule, zwiebel, bolle 157, 377
Citron: unknown bef. Alexander, 331-2; slowly naturalized in Italy 334-5-6
Citrus: prop. κέδρος, cedar (citrosa vestis); then citron-tree, and so mālum citreum (citron) and κιτρέαι 333-4
Cive, civette, chives: fr. caepa . 160
Claie, clêtâ, cliath, cluit (wattle) 117
Claret: vinum claratum, moratum 81
Cock: unknown in Europe and W. Asia till Pers. conquests, 241-2; name ἀλέκτωρ conn. with fire-worship, 244-5; inferences fr. names—kana, hana, hennâ; kogut, kukko, coq, chick; kur, kura, &c. . 248-9, 482-3-4
Coileach, chelioc (cock), calocatanos (wild poppy) . . 483
Colophonium (violin resin) . . 317
Columba (pigeon): fr. κόλυμβος (diver, waterfowl, white fowl?) 259; hence colum, koulm, gólubĭ 261, 485
Comadreja (weasel) . . . 4[illegible]
Complexion: dark absorbs fair 40-5-6
Coniglio, cony, G. kaninchen, küniglein: fr. cuniculus . 343
Copper: known to Aryans (ayas, aes, aiz, îarn) . . . 445
Coq (cock), coquelicot (wild poppy) 483
Coral-tree 394
Coriander: Heb. gad, Afr. goid 163
Cork stoppers 457
Cortex (bark), corcha, cork . 457
Corylus for cosilus, cosl, hazel = κάστανον? . . . 295, 487
Costa (rib), kostĭ, ὀστέον (bone) 240
Cotognata, cotignac (quince-jelly) 186
Cotonea māla (quinces) . 186, 333
Cotton: *versus* linen, 148-9, 150; introduced by Arabs to Italy (cotone) 390

PAGE

Coxa (hucklebone), cos, coes . 435
Crisuommolo (apricot): fr. χρυσόμηλον 322
Crocus: *see* SAFFRON.
Cromlech 116
Crown-imperial: fr. Persia . 392
Cucumber: in Egypt . . 234-5-6
Cucurbita, courge, G. kürbiss (gourd, pumpkin) . . 238, 240
Cudon, ys-guthan, ciad-cholum, keutaris (ringdove) . . . 485
Culmus, halm (any stalk) . . 430
Culture: exhaustion of soil by, not irremediable, 19–26; causes of decline in East, 26–30; effects of, on plants and animals, 400, 402-3; on man . . 400–403
Cuminum, G. chumil, kümmel . 461
Cummin, Heb. kammon: fr. SW. Asia, 162; black c., git, gith . 163
Cuniculus (rabbit, mine) . . 343
Cupa, κύπη, G. kufe (cask); coppa, cup; cupola, G. kopf; cuparius, cooper 455-6
Currants 80-1
Cydonian apple (quince) . 185, 333
Cypress, 18, 20; came fr. Afghanistan to Palestine, Cyprus, 212, 478-9, Crete, Greece, 213-4-5, Italy, 215-6; its symbolism, 212-6, 479, 480; use in shipbuilding, statuary, joinery . 213-5
Cyprus: named from cypress . 478
Cytisus (tree-clover): fr. East; good for cattle, made milk 306-7-8
Cytorus Mts.: grew boxwood, 177, 474

DACHS, taxus, tasso (badger): fr. dëhsen 493
Dacians: tattooed, 33; akin to Thracians and Getæ . 62, 428
Daktylos, datil, dattero, G. dattel, Fr. datte (date) . . . 209
Dahæ: equestrian nomads . . 47
Damascene, damson, G. zwetsche (?) 288

PAGE

Δάφνη fr. δέφω, as laurus fr. lavo, 472-3
Darde (pear) 499
Dariben (terebinth): native to Kurdistan 489
Date-palm, 18; came fr. Babylonia to Arabia, Palestine, 203, Greece (as symbol of Apollo, &c.), 204-5-6, Italy, 206-7-8, 210-1, Spain, 210-1; training of white palm 210
Daube, douve (stave of cask): fr. doga, δοχή . . . 454-5
Δαύχνα, δαυχνός (laurel) . . 473
Dëhsen (turn, swingle), deichsel, thîsl (thill of waggon) . . 493
Deus (god); Lith. dēvas, Finn. taivas (sky) 32
Dhorra (black millet) . . 385
Difna, defle, Arab. (oleander) . 311
Dik (cock), tik, tyuk (hen), Mong. takiá 249
Dikusha (buckwheat) . . 388
Di-mallum = two-peaked . . 429
Dodōna in Epirus, 60; in Thessaly 61
Doga, dauge (stave), Sl. dugá (bow): fr. δοχή . . 454-5
Dokhn (black millet) . 385, 497
Dolmen 116
Domiciliation: promoted by tree-culture 102–109
Donnola (weasel) . . . 492
Dorian migration, the last . . 61
Dove, the wild, 253-4-5: deáf, dubo, taube, fr. dark hue; so πέλ-εια, pal-umba, siz-iák, bis-et, &c., 258; half-tamed . 260
Dubh (black): R. Dubis, Doubs 258
Duck: native to Europe . . 277
Dulbend (turban), tulipano, tulip 391
Dwarf-palm 206
Dyn, dynat, danad, linad, lenad (nettle) . 428, 470

EAR, ear-th . . 64, 104
Eás, for veás? (weasel) . 492
Eburones: fr. ibhar (bow)? 407

PAGE

Echalas (vine-pole): fr. χάραξ? 451
Echalotte, shalot, scallion . . 154
Eglus, oglus (yew) . . . 408
Εἰρεσιώνη = virga lanata . . 95-7
Ἐλαία (olive-tree) 91-2
Elch (elk): replaced by Sl. elèn 495
Elder: for spear-shafts . . 31
Ἤλέκτωρ (sun, fire), ἤλεκτρον (amber) 244
Ἠλέκτρα, Ἠλεκτρύων . . 244
Ἔλφος (butter) 128
Emalas, emelmo (mistletoe) . 488
Ἔμ-φυτος, inpotus (graft); ἐμφυτεύω, impiton, impfen, Fr. enter (imp, graff) 327
Eneti, Heneti, Veneti . . 63
England: future of . . . 24
Ephyra (watch-tower): towns so called 65
Epopeus: his oil-fountain . . 95
Erba spagna (lucerne) . . 306
Erbse, árawîz, ἐρέβινθος (pea) 167, 377
Ἐρινεός ὄλυνθος (wild fig) . . 459
Ermine, hermelin: fr. harm . 492
Ervum, earfe, ὄροβος (pea) . 167
Esparto (Span. broom): in Punic Wars 134, 151
Ests, Esthonians: drank mead and mare's milk . . . 55
Etruscans: in N. Italy . 63, 74
Eucalyptus globulus: fr. Australia 395
Euonymus (spindle-tree) . . 310
Europe: half Wine-and-oil, half Beer-and-butter . . . 119
European wild plants reclaimed, very few: perhaps cabbage, artichoke, turnip, carrot; not apple 399
Exhaustion of soil by culture: not irremediable . . 19–26

FABA (bean): bobŭ; babo, pupa; papu, ubba; ffa, seib . . 440
Fahs (hair), πέκος (fleece), πέσκος (bast) 470-2
Fairy (weasel) 492

PAGE

Falco (falcon), falx (sickle) 486; cf. ἄρπη.
Falconet (gun): prop. little falcon 286
Far, farina, farrago . . . 438
Fauna: subject to change 17 *et passim.*
Felis (wild cat) 348-9; bele (marten), belette (weasel), bilch (rellmouse) 492
Felt, G. filz, Sl. polstĭ . . 31
Fennel 235-6
Fern, G. farn, 484; *see* PARI-TI.
Ferret, furetto: brought fr. Africa to Spain (to hunt the rabbit ?) 476
Ficus, σῦκον: fr. σFικον . . 456
—— duplex; bifera; Carica, Caunea (Smyrna) . . . 87
—— Ruminalis . . 87, 458
Fieno d'Ungheria (lucerne) . 306
Fig-tree: native to Syria, 85; came to Greece after Hesiod, 85-6, to Italy, 86-7; varieties, 87, 457-8; type of higher life, 86, 131
Fimmel, mäschel (hemp) . 151-2
Finns: in Europe bef. Aryans . 34
Fir-tree: pīnus pĭcea, ἐλάτη . 223
Flagellum, G. flegel, flail . . 377
Flagon, flask: fr. vasculum . 456
Flahs (flax), plaukas (hair), plauszas (bast) . . . 470-2
Flax: seed used bef. fibre (?) 132-3; cultiv. in Egypt, 133, Palestine, Colchis, &c., 134; less in Greece, 139, more in N. Italy, Spain, Gaul . 140-2-3
Flora: subject to change 17 *et passim.*
Flowers: first trained in Asia . 187
Focaccia (cake): fr. focus (hearth) 436
Fœniculum, G. fenchel, fennel . 377
Forests: destruction of . 19, 20-1
Formento, froment (wheat) . 433
Fruit-culture . . . 323-328
Fufluns (Bacchus) = βύβλινος ? . 449
Fyrs, furze: akin to πυρός (wheat) 431

PAGE

GADHVA (cat ? dog ?) . . 492
Gaggia di Costantinopoli . . 393
Gaidys (cock), gąsli (psaltery) . 483
Γαισ-άτοι (spearmen) . . 447
Γαλέη (weasel) 348
—— Ταρτησσία (ferret) . . 344
Galgo: fr. canis Gallicus . . 282
Galica, galka (daw) . . . 482
Galla (gall nut): for gac-la = κηκ-ίς 482
Gallinaria silva 452
Gallus (cock): for gac-lus = κάκα 482
Gâr, gêr, geir (spear): fr. Celtic 447
Garduña (weasel) . . . 492
Garlic, gâr-leác, geir-laukr . 160
Garofolo,—fano (pink, gilliflower) 393
Garrio, γηρύω, gla-góla-ti . . 482
Gauls: mixed horse and foot, 57; made hunting an art . . 282
Gautar, Gotar (Scand. Goths): fr. gjóta (pour) . . . 422-3
Geloni: tattooed . . . 33
Gelso (mulberry): fr. morus celsa 293
German terms of building borr. fr. Latin, 117; of gardening and farming 377
Gertis (cock), gerto (hen), gertoanax (hawk) . . . 484
Gesmino, gelsomino, jessamine . 390
Gĕtæ: akin to Thracians 62, 428; turned teetotalers . . . 454
Γήτειον, γηθυλλίς (leek) . . 157
Giglio, lirio (lily): for lilio . 476
Girna (millstone), girnos (quern). 436
Git, gith (black cummin) . . 163
Giutan, gjóta (pour) . . 422-3
Glass bottles: modern . . 456
Glocio, κλώζω (cluck) . . . 484
Glukhŭ (deaf): glukhárĭ, gluszec, hlukhan (heathcock), 485; cf. KURTINYS.
Goat: enemy to young trees, 23; in Greece and Italy, 112-3; has a common Aryan name . . 462
Goat's, sheep's = wild, unfruitful 432-3
Gobel, Gybl (hill), Byblos . 448, 477
Goid (coriander) . . . 163

PAGE
Gold: two names, (1) aurum, ausis, owr, &c.; (2) gulth, zóloto, selts (χρυσός?) . 442-3
"Golden apples": not orange or lemon 185, 331
Γομάρι (ass): fr. γόμος (load) . 461
Goose: native to Europe, 277; easy to tame, 278; its down, quills 279
Gopher, κυπάρ-ισσος, cupr-essus . 214
Goths: ravaged Greece, 29, 30; named from giutan (pour) 422-3
Græci, Γραικοί (=old?) . . 426
Græcum, crèque, G. krieche (sloe) 288
Grafting: carried to excess, 325-6; but beneficial . . . 326
Grajo (gray, badger): fr. agrario? 494
Granada: fr. mālum granatum . 183
Grävling, greving (badger) . . 494
Grècha, grèchikha, gryka, grücken (buckwheat) . . . 387-8
Greeks: enter Greece, 60-1; become farmers, 64-5; influenced by Phœnicians . . . 66-7
Greffe, graff 327
Griotte, agriotta (wild cherry) . 488
Grusha, khrusha=ἀχράς? (pear) 499
Guinea-fowl: came fr. Africa to Greece and Italy, 271-2-3; *see* MELEAGRIS
Gul (rose): fr. vareda . . 475
Gurke, gherkin 239
Gutans, Gutôs (Germ. Goths): fr. giutan (pour) . . . 422-3
Guth, God: Iranic . . . 464
Gwiniz (wheat): fr. gwenn, cvind (white) 431
Γύης (plough), γυιός (bent) γυῖα (knees, joints) . . . 435
Γύπη, γυπάριον, župa, zhupishte (cave) 411-2
Gyro-falco, ger-falcon, G. geier . 486
Γυρός, γῦρος, γυρεύω (round, go round); girna, zhérnov, quairnus (millstone); γῦρις (meal); Γυραὶ πέτραι 436

PAGE
HÆNEP, hanpr, hanaf: fr. κάνναβις 151
Haêtumañt, Etymander, Helmand 478
Hahan, hahhila, haken, hacke, hächse, hough . . . 435
Haida, haidina (millet): fr. heidenkorn 387
Αἰμασία (fence): of thorn, stone, or both 106
Half-Hellenes 61
Halka, alka (cock)=ἀλέκτωρ? 242-4
Halle (salt-pit), Halys, &c. 410-1
Hammer: OG. hamar (stone) . 445
Hamster: reached W. Europe about fall of Rome, 352; Sl. khomiák, khoméstarŭ . . 494
Hana (cock), hanjô (hen), hôn (chick), 248; cano, καναχή . 482
Hangan, henge, henkel . . 435
Ἁπαλός, ἁμαλός (mollis) . . 459
Harinc, herring=shoal-fish . 411
Ἅρπη (sickle) 438; (falcon) . 486
Hart, harcelle (withe, osier-band) 467
Haru, haraw (flax), kerp (hemp) =kropiva (nettle) . . . 470
Hashish 151
Hawk 283, 486
Hawking: in Gaul, 282; Thrace, 283; India, 284; firearms named from 286
Ἡγητηρία (leading, guiding): lump of figs at Plynteria . . . 86
Heidenkorn (buckwheat) . . 387
Helico: brings smith-work from Italy to Gaul 446
Hellenes, Graikoi . . . 60
Helvennaca (kind of grape) . 78
Ἡμί-ονος (mule) . . . 112, 461
Hemp: seed used before fibre (?), 132; came from Turkestan to Thrace, woven into clothes, exported to Greece, 151; its oil eaten 152
Hen, hennâ, hanjô: fr. hana (cock) 248
Heneti: (1) of Italy (=Veneti), 63; (2) of Asia, bred mules, 111, 461

PAGE

Heth, huth (pour) . . . 422
Ἱερός (sacred), ἱέραξ (falcon): saker-falcon, G. weihe . . 486
Hinn (Egyptian measure) . . 466
Hinnus, ἴννος, ἶννος, γίννος (mule) 462
Hippobotos in Armenia . . 46
Hippotades (horseman's son) = Æolus 49
Hirquitallus,—llio: fr. hircus (goat) 433
History: second period . . 394
Hlaibs, hlaifs (bread): from κλίβανον, 435; ost-hleifr . 436
Hleithra (tent), klētis (barn) . 116
Hoha, huohili (hook, plough) . 435
Ὅλμος, ὕπερος (mortar, pestle): unlike Latin 438
Honey 126
Hoppe, hub-alus, houblon, l'uppolo, lupulus; hum-elo, χουμέλι, khmèlĭ, komló (hops) 359, 360-1
Hops: unknown to ancients, 358; first mention of, in France, Germany, England, 359; in Russia a symbol of joy . . 361-2
Horn: made into bows . . 408
Hornung (February) . . . 302
Horse: known to Aryans, but whether used by them, 34–60; native in Mongolia, 35-6; came to Turkestan 36, Egypt 40, Syria 41, Arabia 42-3, Assyria 43-4, Media, &c., 45-48; its Aryan name akva, 48; its use in religion 48-9, among Persians, Greeks, 53-4-5; Slavs, Lithuanians, Germans, Celts, 55-6; horse and foot combined, 57-8; three ancient types of, 424; castration, shoeing 425-6
Horse-chestnut: came from Turkey . . . 298-9, 393
Hruk, hrukjan (crowing) . . 482
Hubalus, houblon (hops) . . 360
Human sacrifices . 32, 414–420
Humboldt on Migrations . . 34

PAGE

Humelo, umlo, fumlo (hops) . 359
Humulus, humala, humall (hops) 361
Humus, χαμαί, zemĭ, zemlià, Semelē? 448
Humus-soil created by Indian fig 395
Huns: as destroyers, 28; horsemen 60
Hûs, house, khîzha = curia? perh. Iranic 464
Hvaiteis, wheat: fr. white . . 431
Hyacinth: fr. Bagdad . . . 392
Hyēs (Bacchus), Hyades (his nurses) = Sabos, Savadæ . . 448
Hyksos, shepherd kings of Egypt 40
Ὑφαίνω, weave 441
Hyrcanians: horsemen . . 45

IAR, yar (hen) 484
Iarn for îz-arn = aes (copper) . 445
Ibe, eibe (yew) 407
Iberians: in Europe bef. Aryans, 34; mixed horse and foot, 57; perh. built dolmens, 116; made beer, 120; hunted rabbit with ferret . . . 343-4, 489
Ibhar, yubar (yew, bow) . . 407
Illyrians: important link, 62-3; made beer, 121, mead . . 126
Indian corn, 497; *see* MAIZE.
Indian fig (Opuntian cactus): fr. America; makes humus round Mediterranean . . . 18, 395
Insects, noxious: in barbarous lands 412
Intrisgan, intrusgjan (graft) . . 327
Ionians, Ἰάονες (= young?) . . 426
Ir, yr (yew, bow) . . . 407
Iran and Turan . . . 27, 46-8
Iranians: as destroyers, 27; horsemen, 42, 44–48; influenced Slavs, prob. Germans . . 464
Iron, eisen, eisarn: fr. Celtic . 446
Irrigation: remedy for exhaustion 25-6
Ismăros: wine of . . 70-1, 447
Italians: enter Italy, 63; become farmers, 64-5; influenced by Phœnicians 66-7

PAGE

Italy: first Aryan settlers in, 63; how changed into a "fruit-garden," 323; employed Asiatics to transplant 324
Ἰτέα for *Fιτέα*, vītex, withy, weide: fr. vieo (twine) . . . 449
Iva, îga, îwa, ivin (yew) . . 407

JAPANESE medlar: in S. Italy . 395
Japygians: of Illyrian race . . 63
Jaxartes: an Iranian word . . 47
Jazyges: nomad Iranians . . 27
Jotham's parable . . 130-1
Jove's acorn: (1) Ju-glans, walnut; (2) *Διὸς βάλανος*, chestnut 294
Jute 150

KA, kau (ox); *κάχλα* (ox-eye) . 429
Kabyles: not nomadic . . 109
Καδμεία, calamine, G. galmei . 478
Kahrka (fowl), *κέρκος* (cock), kyark, cerc (hen) . . . 249
Kalmuk-Turgut migration . . 34
Κάμαξ (vine-pole) . . . 451
Kana (cock), *καναχή, ἠι-κανός* 248, 482-3
Karbysh (hamster) . . . 494
Karde (teasle): fr. carduus (thistle) 377
Kardêlus,—lis (rope of bast or osier) 466-7
Kartoffel (potato): fr. tartufo bianco 395
Kásha (buckwheat gruel) . . 388
Katils, kotīlŭ, kettle: fr. catinus 461
Keckers, licutkekers (peas, lentils) 167
Κείρω (shear, shave) . . 409, 410
Kelyn, klën, *κλινό-τροχος, γλεῖνος*, hlinr, lîn-boum, lehne (white maple) 481
Kemenâte (warmed room): fr. caminata 117
Kendees (cock): fr. canto? . 483
Κέραμος (pottery), *Κεραμεῖς* . 441
Κεράτια (carob pods); cerates (carats) 341
Kharûs, *χρυσ-ός* (gold) . . 443

PAGE

Khlèbŭ, klèpas, klaips (bread): fr. hlaifs 435
Khmèlĭ, Sl. (hops) . . 361-2
Khomiák, khoméstarŭ (hamster) 494
Kirghizes: as horsemen . . 36-7
Κίρκος, chark, kréchet (falcon) . 487
Κιθών, χιτών (tunic): fr. Phœn. kitonet (linen). . . 66, 133-9
Kiti (Egyp. measure) 466
Kjönne, den kj. (weasel) . . 492
Klētĭ, klētis (shed, barn) . . 116
Κλίβανος, κρίβ. (earthen oven), *κλίβανον* (cake) . . 435-6
Κλινότροχος (white maple) . . 481
Knoblauch (garlic): for kloblauch 160
Κοχώνη, κόκκυξ (os sacrum) . . 435
Κοκκό-μηλα; κόκκυγος μῆλα (apricots): fr. præ-coqua . . 321
Κοκκυγέα (periwig-tree) . . 318
Κοκκύ-μηλον (plum) . . . 287
Kókotŭ, kogut, kohut (cock), kókoshĭ (hen) . . . 248, 483
Kolokyntha (pumpkin) . . 236
Κολοσσός: for *κολοκιός* . . 236
Κόμαρος (arbutus) . . . 305
Kómnata, Sl. (room): fr. caminata (chimneyed) 117
Konks, kook (hook) . . . 435
Κονύζη in beer . . 121, 360, 449
Korma, kourmi (beer) . . . 123
Κότινος (wild olive): cotinus 308, 474
Kralikkas, krolik (rabbit) . . 491
Κράνεια, cornus: fr. *κέρας*, cornu 302-3
Krausze, khrusha = *ἀχράς*? (pear) 499
Κρέκω (weave), *κερκίς* (shuttle), *κρόκη* (woof), Sl. krósno: unlike Latin 442
Κρίνον (fire-lily) . . . 189, 475
Κρόμυον (onion), creamh, kermusze, cheremshá, hramsa, ramson, buck-rams (wild garlic) . 156
Kropiva (nettle): sails made of . 469
Kuban, Hypanis 240
Kuk, kukko, cocc, coq, göckelhahn; kyklîngr, küchlein, cycen; *κοκκύζω* 249, 483

PAGE

Kukurúz (maize) 385
Kurluk (buckwheat) . . . 388
Kurtinys (deaf; heathcock) . 485
Kúrŭ, kúra (cock, hen), churu, churûh, churûs . . . 248
Kwetys, gaidys (wheat) . . 431
Κύαμος, πύαμος = haba, faba (bean) 440
Κυδώνια μῆλα, cotōnea, coing, cognasse, quince . . 185, 333
Κυπάρ-ισσος, cupr-essus, Heb. gopher 214
Κύτινος (pomegranate) . . 474
Κύτωρος: κότινος (box?) . . 474

L for D: linad, λάφνη, laurus 470-3
L final in Germ. for N . . 461
LM for DM, TM: Palmyra, Palmosa, Helmand, &c. . 477-8
Labos, rabóta, arbeit . . 436
Lactuca, G. lattich, lettuce . 377
Lagena, G. lägel (pot) . . 461
Lake-dwellings: later than supposed 443–446
Lâleh, lily 475
Land used in three ways: pasture, ploughing, planting . . 104
Land-measures unlike in Greece and Italy 438
Λάφνη (δάφνη) = lav-rus . . 473
Lapin (rabbit): fr. clapin (stooper) 345
Larissa (fat-soiled): towns so called 65
Laserpitium (a spice) . . . 153
Lástka, lástochka (weasel, swallow) 492
Latins 63
Lātona, Λητώ . . . 93, 157
Laurel: followed Apollo-worship fr. W. Asia to Greece, 169, 171–174; to Italy, 172-3; its geographical limits. . . 175
Laurix, lorichi (rabbit) 344-5, 491
Laurus insana 174
——, Laurentum, Lavinium: fr. lavo 472-3
—— tinus 173

PAGE

Lavender, laundry: fr. lavo, lavandula 377
Lazzeruólo (azerólia-tree) . . 390
Λεβηρίς (rabbit): λεπορίς = lepus? 491
—— (skin): fr. λέπω (peel) . 491
Leek, onion: loved or loathed, 153-5-7, 160-1; magic powers, 158, 160; leác, lauks, lúkŭ, lus, llysian, 159; the cloven is klob-lauch, gâr-leác, chesnók; the single, unio, oignon . . 160
Leithus (strong drink) . . 125
Leleges: pre-Hellenic . 61, 426-7
Lemon: came with Arabs (limûn) 336
Lentil: fr. Egypt (φακός, Phacussa), or Palestine (adashîm), 165-6; European names fr. lens, exc. Slavic fr. cicer (chick-pea) 166-7
Λέπω (peel), λεπτός (tender) 468, 491
Λευκαία, λευκό-λινον (esparto) 134, 151
Leute, liudŭ (people): fr. liudan (to bud) 421
Līber, louft (bast); λέπω, lup-ti (peel); lîpa, lēpa (linden) . 468
Līber, Lībera 74-5
Lībum (cake): for clībum, κλίβανον 435-6
Libyans: in SW. Europe? . 34
Līcium (woof), 442; lyko, lunkas (bast) 468
Liebstöckel (lovage): fr. libisticum 477
Liège (cork): fr. levis . . 457
Ligurians, Ligyans . . 63, 344
Lilac: fr. Turkey . . . 392
Līlium, λείριον, lirio (white lily): fr. lâleh 189, 475
Lily: unknown to Homer, 187; came fr. Central Asia to Greece, 189, Italy, 191; as symbol . 193
Lime-bast: plaited . . . 31
Limes decumanus (E. and W. line) 73
Linad, lenad, linhaden (nettle) = dyn, dynat 470
Lînboum, lehne (white maple) . 481
Lind, linn, lionn, leann, llyn (beer) 125

PAGE

Lind (lithe, bast), linde (linden), lindi (sash) 468
Linen : woven in Egypt, 133, Palestine, Babylonia, Colchis (sardonicon), 134, 466 ; white worn by priests, 135 ; l. sails, nets, armour, 135–138, 140-1 ; worn by Ionians, Athenians, 138-9; woven in N. Italy, Spain, Gaul, Germany, 143 ; Germans love it, 146-7 ; used as money, 148; l. *versus* cotton, 148-9, 150; rag-paper invented, 149 ; l. found in Lake-dwellings . 470
Λίνον, līnum, 136–139 ; name spread over Europe, 143 ; = dyn ? 470
Λινο-θώραξ (linen-corsleted) . 137
Linse, G. (lentil) : fr. lens . . 377
Lint : used by Greeks . . 149
Linteata legio 141
Linteum (bast, linen) . 468, 470
Linteus liber . . . 139, 140
Lîpa, lēpa (lime-tree) . . . 468
Līra, ge-leise (rut), de-līro (swerve) . . . 430-8
Lithuanian, Lētuvis : fr. lēti (pour) 423
———s : bred horses . . 55
Λῖτι, λῖτα (linen cloth) : for λίντι, λίντα 468
Loaf, G. leib : fr. κλίβανον, (c)lībum, hlaifs, 435 ; l. of sugar, salt, cheese 436
Locrians : pre-Hellenic, 61 ; retained linen armour, 137-8 ; oath of 156, 472
Lombardy poplar : fr. America thro' Italy 394
Loom : how old . . . 67
Loshák, ishák (mule) . . 462
Lot-casting . . . 32, 421
Lucerne, mēdica : came fr. Media to Greece, 306 ; to Italy . . 307
Luppolo, lupulus (hops) : fr. lupus ? 360-1-2
Lus, llysian, les (leek) . . 159
Lycians : an Iranian people . 27

PAGE

Lyopa, lyope (cow) . . . 429

MACEDONIANS (long men) : half-Hellenic. 61
Madeira : fr. materia (timber) . 479
Magnolia : fr. America . . 395
Maira (twinkler) = Sirius . . 70
Maize (Indian corn, wälsch-korn, &c.) : fr. America ; its rapid spread . . . 384, 395, 497
Malan (grind) : mehl, meal 436-7
Mallĭ (hill), Di-mallum . . 429
Malt : fr. melt 125
Mālum, μᾶλον : any large tree-fruit 499
—— citreum : fr. κέδρος . 333-4
Mamaliga : made of maize . . 384
Mana-sêths (men-seed, world) . 423
Mandarin orange . . . 339
Mannus (ass, horse, mule) . . 462
Mantēla,—lia (table-cloths) . 142
Maple 222, 481
Marasca, merise (sour cherry) 301, 488
Marga, margila, G. mergel, marl 377
Marmalade, marmelo : fr. mĕlimēla 186
Măron, Maroneia . 70-1-2, 447
Marten : tamed . . . 347-8
Mäschel, fimmel (hemp) . 151-2
Maslo (oil, butter) . . . 130
Massa (lump of dough) : fr. μᾶζα 436
Massagĕtæ : nomad Iranians, 27, 28 ; had horses, 47 ; sacrif. them to Sun 48
Massic wine 82
Mastich-tree, 314 ; its resin chewed 317
Mattock : single-blade μά-κελλα, two-pronged δί-κελλα . . 107
Mead : in Pannonia (μέδος), 122, 126 ; drunk by Aryans . . 126
Meall (hill) : Mello-dunum, —sectum 429
Mechanical terms unlike in Greek and Latin . . . 441-2
Méchĭka, meszka (she-bear) . 428
Medgy, Medgyfa (cherry) . . 488

PAGE
Median horses . . . 45-8, 60
Mēdica, mielga (lucerne) . 306-7
Μέδος, medŭ, mid, middus (mead, honey) 126
Meer-rettich (horse-radish): fr. armoracia 377
Megarian tears 156
Mèkhŭ (fur, fell) . . . 428
Melarancio (bitter orange) . . 337
Melas, Melantheus (black) = goat-herd 70
Meleagris (guinea-hen, G. *perl-huhn*): fr. Meleager, 271-2, or mereghà (hen) . . . 247
[or margarita, pearl?]
Melga, melica (black millet) . 385
Melia azedarach 390
Meliaca, muliaca (apricot): fr. armeniaca 322
Mĕli-mēla (quinces for jelly) . 186
Μελίνη, milium, malnos (millet); Μελινο-φάγοι in Thrace . . 439
Melis (badger) . . . 348, 493
Mello-dunum, — sectum (hill-fort) 429
Melon: in Egypt, 235; Italy, 237; came fr. S. Asia . . . 238
Mentha, mint, G. münze . . 377
Mercatus, market, G. markt . 117
Messapians: of Illyrian race . 63
Metal: a Phœnician word . . 443
Metals . . . 442-3, 44-5-6-7
Μέθυ (wine) . . . 126, 447
Micio, mieze, mishka (puss) . 493
Migrations: ancient and modern 34
Milica (black millet) . . . 385
Militarism under Rome 366-7, 496
Mille passūs, mile, G. meile . 377
Millet: early cultiv. in all agricultural Europe, 64-5, 439; retired first fr. Greece and Italy, never liked by Germans . . 440
Μιμαίκυλον: akin to μαιμάκτης (stormy)? 305
Minyans (little men) . . . 61
Mirabelle (a plum): fr. μυροβάλανος 288
PAGE
Mĭskŭ, mĭshte, mushke (mule) . 462
Mistil, mistletoe: for viscum 303, 488
Mixing of species disapproved 325-6
Molĕre (grind), 429, 430; mola (mill): whence G. mühle, müller 436-7
Molossians: half-Hellenic . . 61
Môly 158-9
Mongols: as destroyers, 29: horsemen . . . 35-6, 60
Μόργιον, Morgetes, Murgentinum 453
Moriæ (sacred olives) . . . 94
Mōrum, μόρον (blackberry; mulberry) 291
Moschetto, musket: prop. sparrowhawk 286
Mosuco, mösch, müsch (weasel) . 492
Μοσύν-οικοι: built on piles . 444
Mouse: a plague; its enemies . 347
Mulberry: fr. Media, 290-1; confounded with sycamore and blackberry, 291; home of silk-worm, esp. the white m. . 293, 487
Mule: its breeding forbidden 111-2
Mulsum (honey-wine) . . 113
Mūlus (mule): fr. μυχλός . 461-2
Múr, mûra, G. mauer: fr. mūrus 117, 464
Mustard, mostarda: fr. mustum 163-4
Mus-tēla (weasel) = mouse-taker 348, 492
Μυχλός, mushke, mĭskŭ (mule) . 462
Μύκηρος (nut-almond) = nuceres? 488
Myrene 473
Myriad, μύριοι, baêvare. . . 423
Μύρον, μύρρα, σμύρνα . . 473
Myrrh-tree 169
Myrtle: followed Venus-worship fr. W. Asia to Greece, 169, 170-1, Italy, 172; its geograph. limits 175
Μύρτος, μυρσίνη, μυρρίνη . . 473
Mysians: had vines, 71, mules, 111; invaded Thrace . . 427

NABATHÆI in Arabia: had no horses 42

PAGE

Nagris, nauris, nairis (turnip) . 440
Nāpus (turnip), *νᾶπυ* (mustard) 163-4
Nârenj, *νεράντζιον*, arancio, melarancio, pom-eranze, aurantium, orange (bitter orange) . . 337
Naródŭ (people) : fr. rodí-ti (bring forth) 421
Nati, net : hence nettle . . 469
Nations named fr. teeming . 421-2-3
Nectarine 322
Νήριον (oleander) : not akin to Νηρεύς 310
Nesaion, Nisæa : horses of . 46
Nettle-fibre : plaited, 31 ; woven into clothes, sails . . . 469
Nevèstka (weasel) . . . 492
New Zealand flax . . . 150
Noatis, notere, nâtra (net) . . 469
Nomads : have a far-away look 36, 500
Nuceres = *μύκηρος* ? . . . 488
Nuragen 116
Nuts, 224-5, 294 ; for Joseph . 312
Nux : Pontica, Avellana (filbert) ; Græca (almond) ; calva (chestnut ?) 294-5-6

OATHS nullified by trick . 156, 472
Oats : despised, named fr. goat (*βρόμος*, *αἰγίλωψ*) or sheep (avēna, ovës) . . . 432-3
Obolys, woble, yábluko (apple) ; obelis, wobalne, yáblanĭ (apple-tree) 498-9
Oculi (bulbs), 225 ; oculus (eye) . 429
Œnotria : named fr. *οἴνωτρον* 75, 452
Oil . . 89, 90, 94, 98-9, 100
Οἰνάς, *οἴναρον*, *οἴνη* . . 255, 450
Oineus (wine-man) . . . 70
Οἶνος (wine) . . 72, 447-9, 450
Oinotropoi at Delos . . . 254
Οἴνωτρον (vine-pole) . . 75, 452
Olu, olovin, öl (ale) . . . 125
Old folks got rid of . . 32, 413
Oleander : its native look in S. Europe deceptive, 309 ; fr. Asia Minor 310-1

PAGE

Oleaster (wild olive) . . 89, 91-2
Oleum (oil) : fr. *ἔλαιον*, 97 ; ol. Liburnicum . . . 99
Oliva (olive) : fr. *ἐλαία*, 97 ; felix ol., 94 ; vivax ol., 95 ; ol. Liciniana, Sallentina, 97 ; Sergia . 98
Olive-tree : native in S.W. Asia, 18 ; only the wild o. in Greece till after Hesiod, 88-93 ; cult. in Attica before Solon, 94 ; introd. into Sicily 95-6, Italy 96-100, Gaul 98, Spain 99, Sardinia, Corsica 459 ; its oil, 100 ; type of higher life . . 131
Onager (wild horse ?) . . . 37
Onion : *see* LEEK.
Opulus (witch-hazel) : for populus 453
Orange : (1) the bitter, came fr. India by Persia (nârenj, Arab. nâranj, Byz. *νεράντζιον*), 337-8 ; (2) the sweet, brought fr. China (apfel-sine) by Portuguese (portogallo) 338
Orarium, sudarium . . 141-2
Orestheus (mountaineer) . . 70
Ὀρεύς, *οὐρεύς* (mule) . . . 112
Organum, G. orgel . . . 461
Ὀρίνδα, *ὀρίνδιον* (rice ?) . . 380
Ὀρόβακχος, —*άκχη* (pomegr.) . 474
Ὄρυζα, —*ζον* (rice) . . 380, 434
Osmans : ravaged Greece . . 29
Ὀθόνη (linen robe, aft. cotton) 135-6
Overrun by rabbits 344 ; mice 347 ; rats 351
Ὀξυς (sharp), *ὄξος*, uksus, uksosas (vinegar) 79
Ozŏlæ in Locris . . . 70, 155

P for T : palma, Palmyra, 208 ; pavo 264-8
P initial dropped in Celtic : athir, iasg 453
Pæonians in Macedonia, 427 ; lake-dwellers 444
Palm (Heb. tamar) ; *see* DATE-PALM.

PAGE
Palm Sunday at Rome . . 210
Palma (date-palm ; dwarf-palm) 206-208, 477-8
Palmāre, tunica palmata . 207-8
Palmyra : fr. Tadmor . 208, 477-8
Palumba (ringdove) . . . 258
Pamplemousse (Paradise apple) 336-7
Panciera, G. panzer (coat of mail) ; fr. pantex (paunch) . 447
Pannonians : an Illyrian people . 62
Pa-partis, pa-porotnik (fern) . 484
Paper : invented in Spain . . 149
Paphlagonians : bred mules . 111
Πάππος : tuft of periwig-tree . 318
Papyrus : extinct in Egypt, 232 ; p. of Sicily, of White Nile . 233
Parabia : brewed in Thrace 121, 449
Paraveredus, palfrey, G. pferd . 377
Parena (feather) ; par, per (fern) 484
Parí-ti (to fly), peró (feather), pá-porotĭ (wing),—tnik (male fern) 484
Parthians : nomad Iranians 27, 47
Párus (sail) : fr. φᾶρος . . 146
Pastèque (water-melon) . . 237
Patmos, Palmosa . . . 478
Pāvo, paon, G. pfau, AS. pawa . 269
Pea : fr. Central Asia . 165–168
Peach : came fr. Central Asia (persica), 320 ; to Italy (dūracĭna, ῥοδ-άκινα), 321 ; Provence (gallica) . . . 322
Peacock : came fr. India (çikkî, togei, Mong. toghos) to Palestine (tukkî), 263 ; to Samos, Greece (tahōs, tavōs), 264 ; to Italy (pāvus, pāvo), 266-7 ; roast p., 267–270 ; p. isles, 268 ; symbol of immortality, 269 ; p. hats fr. England, 362 ; p. vows 270
Pear : native to S. Europe ; the wild, ἀχράς ; the cultiv., ὄγχνη, ἄπιος, pirus, krausze, grusha, darde 499
Peat-pig 32
Pecora, la (sheep) . . . 351
Pĕdāre, pĕdamen, πηδόν (prop) . 452
PAGE
Πέκω (comb, orig. pluck, pész-ti), 409 ; πέκος (fleece), πέσκος (rind, bast), 470 ; cf. Vellus, Runo.
Pelasgians (=old ?) : pre-Hellenic 61, 426
Πέλεια (dove), περιστερά (pigeon) 253-4-5, 258-9
Pelzen, G., empeltar (graft) : fr. pellis 327
Pènka, pienka (hemp) : fr. bang (intoxication ?) . . 471-2
Πέπων, pĕpo, G. pfebe (pumpkin) 237, 240
Pepper-tree 395
Περιστερά (pigeon) : fr. prî (love) ? or parena (wing) ? . . 255, 484
Periwig-tree . . . 314-8
Persian nuts 295
Persica, pesca, pêche, peach, G. pfirsich, Sl. breskva, broskvína 322
Pesca noce (nectarine) . . 322
Péshdâd : a Pers. nut (pistachio ?) 489
Péska, pesók (sand, grit, gravel) 168
Petitpas (peacock) . . . 269
Petlŭ, petúkh (cock) . . 248, 483
Petrosilium, G. Petersilie, parsley 377
Peucetians, Picentines . . 452
Pferd, G. (horse) : fr. paraveredus 377
Φακῆ, φακός (lentil) . . . 166
Φάψ, φάσσα, facha, faza (dove) 255, 484
Φαρμακός (poisoner, scapegoat) 457-8
Pheasant : fr. Colchis (phasianus) ? prob. fr. Media (tetarus), 274-5 ; gold and silver ph. fr. China . 276
Phēgeia became Psophis . . 479
Φιλύρα (bast, linden), φελλός (bark), φλοιός (cork) . . 468
Phœnicians : civilize Europe, 66-7 ; introd. wine, 72-3 ; perh. oil, 95-6 ; &c., &c.
Phœnix (palm) : fr. Canaan, Chnâ (Phnaa) 204, 477
Phrygians : an Iranian people 27, 62, 426

PAGE

Φυλία (olive-tree ?) . . 91
Φυτεύω (I plant), φυταλιά, Phytios 70, 104
Pict : Latin for brit (tattooed) ? . 33
Pigeon, the tame white : unknown in Greece till Pers. invasion, 253-4-5 ; came fr. Babylonia to Syria, Cyprus, 255-6-7, Greece, 257-8-9, Sicily, Italy, 259 ; περιστερά, columba, 255-9 ; symbol of Nature-goddess, then of Venus, 257, of Holy Ghost . . . 261
Πικέριον (butter) : pinguis, παχύς ? 128
Πικροδάφνη (oleander) . . 311
Pīla, pīlum (mortar, pestle) : fr. pinso 438
Pilarium, pillar, G. pfeiler . . 117
Pīlus (hair), πῖλος, pileus (felt, felt hat), G. filz . . . 31
Pine-tree, pīnus pīnea, *L.*, πίτυς (nut-pine) : prob. not native to Greece or Italy, 225 ; Pinēta of Ravenna . . . 225-6-7
Pink, gilliflower : garofano, œillet 393
Pinso, pīso (bruise), 167, 430 ; = πτίσσω ? 438
Pistachio : came fr. Persia and Syria to Italy, Sicily, 312-3 ; grafted on turpentine-tree, 314 ; its brothers terebinth, mastich, periwig, sumach . . 314–319
Pīsum, πίσος (peas) . . 167-8
Pityusæ (Yviza) : fr. πίτυς . . 479
Pivo (beer) : fr. pi-ti (drink) . 125
Plane-tree : beauty, shade, 217, 221 ; size, age, 217-8-9 ; came fr. W. Asia to Greece, 219, 220, Italy, 220-1 ; American plane . . . 222, 394
Plants fr. Semitic lands cling to S. Europe ; those fr. Iranic reach Central or N. Europe 363-4, 479
Plants, the track of : is that of culture in general . . . 398

PAGE

Platanus, πλατάνιστος (plane) . 220
Plaumorati (first wheeled plough) 437
Plent (buckwheat) . . . 388
Ploskon, póskoně (hemp) = flahs, fahs 472
Plough : early names = hook : γύης, hoha, szaka, 435 ; wheeled plough invented by Gauls : plaumorâti, plovum, plugŭ . . 437
Ploughing, 64 ; plough-ox . . 50-1
Plum - brandy : slivovica, 289, tchuka 384
Plum-tree : came fr. Asia to Greece (κοκκύ-μηλον), and Italy, 277-8 ; plum forests in Bosnia, Servia 289
Podargē : a harpy 49
Pœnus, Phœnice : fr. Canaan, Chnâ 477
Pogánka (buckwheat). . . 387
Polenta of maize, buckwheat 384-8
Πόλις, populus . . . 33, 421
Pomatum : fr. pomum . . 130
Pomegranate : followed Venus-worship fr. SW. Asia to Greece, 180-2 ; Italy, 182-3 ; its symbolism, 181-2-4 . . 474-5
Pomeranze (bitter orange) . . 337
Pomo di paradiso, d'Adamo 336-7
Pomum : any large tree-fruit . 499
Pondus, pound, G. pfund . . 377
Pontic nut (filbert ?) . . 294-5
Poppy 235-6
Portogallo, protokale (sweet orange) 338
Potato : fr. America thro' Italy, liked in N. Europe . . 395-6, 498
Potter's wheel : how old . 67, 440-1
Povoloka (silk ?) . . . 469
Præcoqua (early ripe) : corrup. to βερίκουκα, al-barqûq, "apricock," abricot, G. aprikose 321-2
Pramnian wine (= παραβίη ?) . 449
Pręs-ti, root pręd- (spin) . . 442
Πριαδήλα, Dac. (briony) . . 360
Privet : for spear-shafts . . 31

PAGE

Propāgo : G. propfen (graft) . 327
Propedula (cinquefoil) . . . 428
Prūnum, προῦμνον (orig. sloe, then plum) 287 ; prugnola, prunelle (sloe) . . . 288
Psittakē on Tigris (fr. πιστάκιον ?) 489
Psophis : its "virgins" . 214, 479
Πτίσσω (= pinso, pīso ?) . . 438
Πτύσσω (fold), πτύχες (layers), πυκνός (compact), πύξος, buxus, box 473-4
Puls, pultis (porridge) : fr. πόλτος 436
Pumpkin : σικύα, tykva 234-6, 240, 458
Punicum mālum (pomegr.) . 183-4
Púshka, Sl. (cannon) ; fr. buxus . 179
Puss, buse, bise 493
Πυρός, pyro, purai (wheat) : akin to pyrei (quitch), pure (tare), fyrs, furze, 431 ; unlike Latin . 438
Πύξος, buxus, box : fr. πτύσσω 473-4

QUAIRNUS, quern : akin to γυιός 436
Quince : fr. Cydonia in Crete 185-6, 333
Quius, quick (alive) . . . 483

R for S : aurum, aurora . . 436
Rab (slave), rabóta (labour) . 436
Rabbit : came (fr. Africa ?) to Spain, S. Gaul, Italy, 343-4-5; bred too fast, 344 ; rabouillère 491
Radix Syria, radish, G. rettich . 377
Rágas (horn) ; ragótine (hornbeam ? spear) ; Raguttis, G. Hornung (February) . . 302
Raip, reif, rope : orig. osier . 467
Rams, ramsen, buck-rams . . 156
Ranunculus : fr. Turkey . . 392
Rape-cole, G. kohl-rabi : fr. caulis rapi 399
Rape-seed, G. raps, rübsen : fr. rapicium 399
Ῥάπυς, rāpum, rèpa, rope, rofa, G. rübe (turnip) . . . 440
Rat (hrat = krot, kertus) ; reached Europe about fall of Rome (?) 351 ; greater rat in last century 352

PAGE

Ratis (for pratis), raith, reden, rhedyn (fern) 484
Razn (house) 464
Receptivity a condition of progress 398
Renzo (lawn) : fr. Rheims . . 143
Repa, rebe (vine), reb-huhn (partridge) 467
Repina (maple) ; repiy (thorn) ; so acer 481
Rhodeia, Rhodope . . . 188
Rhodo-daphnē,—dendron (oleander) 309, 488
Ῥόδον, βρόδον (rose) 189 ; fr. vareda 475
Rhœæ, ῥοιαί (pomegranates) . 180
Rhūs, ῥοῦς (sumach), &c.) . . 318
Rhyg, riguet (rye) : borr. fr. Teut. 434
Rice : came fr. India (vrîhi) to Persia (brîzi, hence ὄρυζα ; birinj, hence ὀρίνδα ?) 379, 380 ; to Bactria, Babylonia, 380-1 ; to Spain with Arabs, 381 ; Italy, 382 ; America . . 383
Rimmon, ῥίμβαι, ῥοιαί (pomegr.) 474
Rimmon, Hadad-R. (sun-god) . 180
Roma, romeira (pomegr.), romano, romaine (steelyard) . . . 183
Roman culture extended to Central, N. and E. Europe, 373-4-5 ; attitude of Romans and Greeks towards these . 373
Rome fell (1) by stupidity in economics, 366, mechanics, 367, navigation, 368, agriculture, 369 ; (2) by intrusion of Oriental ideas, 370, and blood . . 371
Ropes : of twisted hide, byblus, 136-7 ; osier, 466-7 ; lime-bast 467-8
Rosa : fr. ῥοδέα, ῥοδία . 475
Rose, the double : unknown to Homer, 187, and in Old Test., 188 ; came fr. Central Asia to Greece, 189, Italy, 191 ; winter roses, 192 ; rose as symbol, 188, 190-3-4 ; rosalia, Pascha rosata 194
Rossī, wild horses on the . 38-9

PAGE

Rozh, rezh, rosz (rye) . . 434
Rugis, ruggys, rugr, ryge, rye . 434
Ruma (teat), Ruminus,—na, ficus Ruminalis 458
Rumpi (festoons for vines) . . 453
Runo (fleece): fr. rŭv-átĭ (pluck) 409
Rusalka (nymph): fr. rosalia . 194
Rye: despised by Romance nations, 433; has two names: (1) secāle, ségola, seigle, σίκαλι, secáre, thékere; (2) Sl. rozh, rezh, rosh; Lith. rugis, ruggys; Teut. roggen, rugr, ryge, (rhyg, riguet) 434

S in Celtic for X: ess, dess, les, ses 159
Saale (salt river), Salassi, &c. . 411
Sabaia,—ium (beer) . . . 121
Sabellians in Italy . . . 63
Sabos, Savadæ="Υης, Hyades 71, 448
Sabus, "ancestor of Sabines" . 451
Sacæ: an Iranian people, 27; equestrian nomads fr. Oxus to Danube 47
Sacer, sacre, sagro, sakalas, sokól (saker-falcon): mis-transl. of ἱέραξ 486
Sætabis (Xativa): linen, 142; rag-paper 149
Safflow, zaffer, asforo: fr. India 201
Saffron, κρόκος: fr. SW. Asia (karkôm) 198; acclimat. by Arabs in Spain (azafran) . 200
Saggina (black millet) . . 385
Sagro (gun): prop. saker-falcon . 286
Sagum (mantle) 145
Sahs, seax (sword)=saxum (stone) 445
Sal-, Hal, in Germ. names=salt: is Hal- Celtic? . . 410–1
Salbe, salve (butter?) . . 130
Samolus (mistletoe?) . . . 488
Sancus, god of Sabines . . 451
Saracen horses and camels . . 43
Saraceno, grano; blé sarrasin . 387

PAGE

Saraparai (beheaders) . 427-8
Σίριδις (year) 466
Σαρδονικόν (Colchian linen) 134, 466
Σάρι, σί-σαρον 164
Sarmatians: nomad Iranians, 27, 62; tattooed, 33; rode horses 47
Sarpo (I lop), sarmentum (twig) 438; cf. ἅρπη, srŭpŭ.
Satres: had oracle of Bacchus . 71
Sauer-kraut: came fr. Tartars (?) to Slavs and Germans . . 399
Savoy, Chou de Milan, G. wirsing 399
Scalogno, scallion, shalot . . 154
Scheffel (bushel): fr. scapilus . 377
Σχῖνος (mastich-tree) . . . 317
Schmalz (liquid butter) . . 130
Σχοῖνος (120 ft.) . . . 438
Schön-dinglein,—thierlein(weasel) 492
Scræf, screona, escregne (underground dwelling) . . . 411
Scythians: nomad Iranians, 27, 62; had horses. 47; bullock-carts, 49, 50; made mead, 126; butter 127-8
Sebocc, hebauc, G. habicht, havoc, hawk 283
Secāle, ségola, seigle, secáre, thékere (rye) . . . 433-4
Segel, segl, sail: fr. O. Ir. seol (or sagulum?) . . . 146
Seidel (pint): fr. situla . . 456
Sêm, sîm (silver): fr. ἄ-σημος (bullion) 443
Semelē=zemliá (earth) . 72, 449
Semiramis, worshipped as dove . 257
Semites, 27; use horses, 43-4; civilize Europe, 66-7-8; introduce wine, money, alphabet, 72-3; transplant trees to Italy 324
Seol, sóol (sail) 146
Serĕre (to sow) 430
Shalot, échalotte: fr. Ascalon . 154
Sheep plucked, not shorn . . 409
Shikmîm, shikmôth (sycamore) . 291
Shirt: a Northern invention . 144
Shoeing of horses: unknown 425-6

PAGE
Shushan, Susa: fr. susan (lily) . 475
Σίβδη (pomegr.) 181; sêb . . 474
Sicera, σίκερα: fr. Heb. shâkar . 499
Sickle, G. sichel: fr. secula . 377
Sicyonian berry (olive) . . 95
Σίδη (pomegr.) 180; Sidē, Sidenē, &c. 181
Sieves: of linen . . . 142
Σίκυς, Sicyon, σίκυος, σικύα, 235-6; συκύα, τυκύα, Sl. tykva . . 458
Sîld, sélĭdĭ, sil-ke (herring): fr. salt 411
Σίλι, σέ-σελις 164
Siliqua Syriaca (carob) . . 241
Silo [asylum?] 480
Silphium, σίλφιον (a spice) . 96, 153
Silver: two names, (1) ἄργυρος, argentum, (2) silubr, srebró, siraplis 443
Sināpis, σίναπι, G. senf (mustard) 163, 377
Σῖτος, zhíto (corn): unlike Latin 432-8
Skauda-raip (shoe-string) . . 467
Skulls made drinking bowls 32, 413
Slavs: settled in Greece, 30; worshipped horses . . . 54-5
Sliva (plum), sloe, schlehe . . 288
Slivovica (plum-brandy) . . 289
Smakka, smokva: fr. σῦκον 456-7
Smells, strong: a counter-charm 158
Σμῖλαξ,—λος (a creeper) = khmèlĭ? 361
Smör (butter) 130
Sneis (twig), sneise (string) . 467
Soap: a Northern invention. 100-1
Soc, soch, sêch (ploughshare) . 435
Sochivo, chechevítsa, Sl. (lentils) 166-7
Sokhà, szaka (hook, plough) . 435
Solarium, sollar, G. söller . . 117
Somaro (ass) 460-1
Sorgo (black millet) . . . 385
Σπάδιξ (palm branch, &c.) . 209, 478
Spargel: fr. asparagus . . 377
Σπάρτα, σπυρίς, sporta (broom, hemp) 471
Spartum, esparto . . 134, 151
Spatha, σπάθη . . . 442, 478
PAGE
Spelt: ζειά, yavas, 62; unlike Latin 438
Spicarium, G. speicher (granary). 377
Spindle: how old . . . 67
Spinea, spionia (kind of vine): ψίνομαι, ψινάς? . . . 453
Srŭpŭ, serp, Sl. (sickle) . . 438
Stákles, stanŭ (loom) . . . 442
Stāmen, στήμων (warp) . . 442
Stipula, stiblo (any stalk) . . 430
Stone-building: came fr. S. Asia to Greece, Italy, 114; unknown to early Celts, Germans, Slavs. 115-117
Stone-tools: lasted far into metal age 445-6
Storax-tree in Syria; yields incense 318-9
Stramenta: for beds . . . 144
Strata via, street, G. strasze . 117
Strawberry-tree (arbutus): used for fodder . . . 304-5
Strutheum mālum (quince) . . 186
Suber (cork oak) . . . 457
Sudarium (napkin) . . . 141
Sugar-cane: introd. by Arabs (zucchero) 390
Sumach: in Sicily yields fine tan, 314-5; introd. by Arabs (sommaq) 318
Sunflower: in the steppes . . 240
Supparus (sail, veil) . . . 141
Sus (horse): Semitic . . . 40
Susan (lily) 189; Shushan, Susa, 475; a-zucena . . . 476
Susína, endrína (plum) . . 288
Svatovit: god of light . . 55
Sveklŭ (beet): fr. σεῦτλον . . 377
Sycamore, sycamine: fr. Egypt or Syria (shikmîm, —môt) . 291
Sycophant 86
Συκάμινος, συκόμορος (sycamore, mulberry), συκαμηνεά . 291-2, 458
σῦκον (fig), 236; for σFικον = ficus, smakka, smokva . . 458-9
Szarmonys, szerm., G. hermelin, ermine 492

PAGE

T for D : citrus, cotōnea, Euretice, tæda 333
Tadmor, Palmyra . 208, 477-8
Tamar, tomer (date-palm) 205-8
Tanais (=Jaxartes) : Iranian word 47
Ταῶς, Attic ταῶς for ταϜως = pavo 264-6-7
Tarantas (steppe vehicle) . . 240
Taterkorn, Tatárka (buckwheat) 387
Tattooing : sign of high birth . 33
Taxo, taxus, tasso (badger) : fr. G. dachs 493
Taxus, tasso, tīsŭ(yew), τόξον (bow) 407
Tchuka (plum-brandy) . . 384
Tegula, tuile, G. ziegel . . 117
Tekin-ti, tochí-ti (turn), tokárĭ (turner) 493
Τέκτων, τέχνη, τύκος, τεύχω . 493
Terebinth : native to Persia, 312, 314–317, 489
Termes (palm-branch) . . 478
Terzeruolo (horse-pistol) : prop. male hawk 286
Τέταρος, Pers. tedzrev, Sl. teterev (pheasant) ; Fin. tetri, Sw. tjäder (bustard, quail, &c.) . 275
Teucrians : had vines, 71 ; invaded Thrace 427
Teukros, Tychios : (τεύχω ?) . 407
Texĕre, tŭk-áti (weave) 441 ; tēla (web) 442
Thaho (clay) . . . 407, 493
Thales : falls on his feet . . 92
Thesprotians : half-Hellenic . 61
Thiuda, thiudisk, deutsch : fr. tu (swell) 421
Thousand : no common Aryan word for . . . 33, 423
Thracians : tattooed, 33 ; horsemen, 54 ; important link, 62-3, 429 ; worshipped Bacchus, 70, 71-2 ; brewed βρῦτον, παραβίη, 121 ; wove hemp, 132 ; Aryan, but not Iranian . . 427-8
Thread : of 360 (aft. 365) strands, 133, 465-6

PAGE

Tik, tyuk (hen), dik (cock), Mong. takiá 249
Tilaventum, now Tagliamento . 459
Tilia (linden), tiliæ (bast), tiglio (hemp rind), teiller (crush hemp) 468
Timrjan (build) 464
Tina (tub), 454 ; tinunculus (kestrel) 487
Tma (darkness, ten thousand) . 423
Tobacco : fr. America, a curse, 396 ; tames the wild . . 498
Togarmah : bred horses, 44 ; mules 111
Tomato : came fr. America to Italy (pomi d'oro) . . . 396
Tona, G. tonne, tun, &c. . . 454
Tourão (weasel) 492
Τόξον (bow) : akin to taxus (yew) 407
Traduces (festoons for vines) . 453
Τράγος (goat, wild fig), τραγάω (not bear) 433
Tree-culture : elevates man, 102–109 ; protected by laws, 108, 460 ; daughter's dowry 215-6, 480
Tree-fodder in S. Europe 304–308
Τριαντα-φυλλεά (rose) . . . 476
Tri-glav (three-headed) : Evil One 55
Τρόχος (badger), τροχός (potter's wheel) 68, 493
Troglodytes 412
Tropæolum majus (capuchin cress) : fr. America . . 394
Trutina, τρυτάνη (balance) = Sl. trŭstĭ (cane) 481
Tŭk-átī (weave), ą-tŭkati (intexĕre), ą-tŭkŭ, u-tók (woof) 441-2
Tulip : came fr. Turkestan with Turks, Crim-Tartars . 391-2
Tulipano (tulip) : fr. turban . 391
Tulip-tree : fr. America . . 395
Tunica : a Phœnician word . 66
Turcicum frumentum (buckwheat) 387
Turkomans : as horsemen . . 36
Turkey-cock : fr. America . 395, 497
Turks : as destroyers, 28 ; horsemen, 34, 60 ; introduce trees, 298-9, flowers . . . 391

PAGE

Turnip: early cultiv., 65; reclaimed in Europe . . 399
Turpentine-tree: in Persia, Arabia, Syria, Palestine . 314–317
Turris, tower, G. thurm . . 117
Τῦκα = σῦκα (figs); Τυκή, Τυχή . 458
Tykva (pumpkin): fr. σικύα, τυκύα 456

UMBRIANS in Italy . . . 63
Under the Olives, Ὑπ-έλαιος . 93
Underground dwellings in winter, 32; tunc, screona, γύπη, zhupishte, φωλεός, τρώγλη, bordeitz 411-2
Unio (onion) 160
Uranos, Varunas: sky personified 32
Ursus: for urctus, ἄρκτος . . 428
Usil (sun-god) = Aurora? . . 442

VADDJUS, G. wand (wall): orig. wattle 464
Vard, vareda, βρόδον, ῥόδον (rose) 475
Varunas = Uranos . . . 32
Vasculum, flask, fiasco, flacon, flagon. 456
Vellus (fleece): fr. vello (pluck) . 409
Veneti: of Illyrian race, 62; occupied E. Italy, 63; lake-dwellers 444-5
Verp-ti (spin), varpste (spindle) . 442
Vetch, vicia, βίκος, βικίον 168, 377
Vieo, vīmen, vītis, vītex, vitta . 449
Vilvan (pluck, rob) . . . 409
Vindobona: fr. vindos (white) . 431
Vine: legends of origin in Greece, Thrace, &c., point to Syria, 70–73; its true home, 73; methods of training, 75, 453; in Italy, 75-6; in Gaul, &c., 76–78; checked by Domitian, Pombal, 79, 453; suppressed by Arabs in Asia, Africa, 79, 80; declined in Greece, Italy, 80–82; best in France, 82-3; prospects, 83; Madeira, Canaries 84; type of higher life . . . 131

PAGE

Vinegar, vin-aigre . . . 79
Vinum: not fr. vieo, vītis . 449, 450
—— moratum, claratum . . 81
—— passum 449
—— Prætutianum, Pucinum . 75-6
Viola, *Fίον*, ἴον: fr. Asia Minor 195-6
Virga lanata: copied fr. εἰρεσιώνη 95-7
Virginia creeper: fr. America . 394
Viscus (mistletoe), visciola (bird cherry) 303, 488
Visla, G. Weichsel, Vistula . 303
Visula (kind of vine), οἶσος, οἰσύα (osier) 453
Visztà, vista (hen) . . . 484
Vītis (vine), 449, 450 = withe, G. weide 467
—— alba (briony) . . . 467
—— Aminæa, Scantiana . . 452
Vlasŭ, vólos (hair) = flahs [vellus?] 470
Vorsus, versus (100 ft. square) . 438
Vratílo (weaver's beam), vretenó (spindle) 442
Vrîhi, brîzi, oryza, rice 379, 428, 434

WADMAL (Scandinav. cloth) . 148
Wain (wine), Ethiop., Arabic . 72
Walnut: fr. Asia Minor . 294-6
Wanne (tub); wannen-weho, wannagas (falcon) . . . 486-7
War-chariot, 40-1, 51-2; invented by Assyrians? . . 43-4
Warnes: "no riders" . . 56
Water-melon, 239; fr. India (hindevâne, kharpuz, arbúz) . 240
Weasel-kind, 347-8; tamed, 348; euphemistic names . . . 492
Weaving: how old, 67; orig. *darning* across a warp, 441; terms unlike in Greek and Latin, in Slavic and Lithuanian 442
Weihe (kite): mistransl. of ἱέραξ 486
Weiler, wyl (hamlet): fr. villa . 117
Weymouth-pine: fr. America . 395
Wîhsela, visciola, vishnia, guisne (cherry) 303

	PAGE
Wilder wein (virginia creeper)	394
Willow for shields	31
Windhund (greyhound) : fr. vertragus	282
Wine : general in Homer, 69 ; name Semitic, 72 ; came fr. Greece to Italy, 74, 450-1 ; cheaper than water, 75 ; horses washed with, 76 ; in Germany, Norway, 78 ; claret	81
Wine-and-oil Europe ; Beer-and-butter Europe	119
Wirsing (savoy) : fr. verza (green)	399
Wispel (bird-cherry)	303
Woi, wuoy, vay (butter) ; woidma, wuoitet, woitelee (anoint) ; hence *βούτυρον*?	129
Wool : plucked, not shorn	409
ξίμβαι, *ξίμβραι* (pomegranate?)	474
YABLUKO (apple), yáblanĭ (apple-tree)	499
Yain, Heb. (wine)	72
Yávor (maple) : fr. ahorn	481
Yelĭ, yelia (fir)	408
Yĕva (bird-cherry, orig. yew)	407
Yew (Celt. yw, eò, ivin, ibhar ; Rom. iva, if ; Teut. îva, îga, îw, eów) : used for bows, turning, carving, poison	31, 407-8
ZALAS (green), żole (grass)	428
Zalmoxis : fr. *ζαλμός*=*χλαμύς*?	428
Zebénksztis (brown weasel)	492
Zeiber, cibara (plum)	288
Zelënyi (green), zhëltyi (yellow)	428
Zelter (ambler) : fr. toluto	377
Zhíto (*σῖτος*, corn) : fr. zhi-ti (live)	432
Zhrŭnuvŭ, zhérnov (girna, quern) : distinct fr. zrŭnó	436
Zrŭnó, zernó, zĭrnis (granum, corn)	436
Zucchero (sugar)	390
Zwiebel (onion) : not fr. zwei	159
Zythum, *ζῦθος* (Egyp. beer)	120

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